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TRANSILLUMINATION IN DISEASES OF THE NOSE, THROAT AND EAR.

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The subject of transillumination is one of considerable interest. Its application, especially to the diagnosis of empyema of the maxillary sinuses, has received a great deal of attention, and since the method was first elaborated by Heryng, in 1890, repeated references to this method are found in rhinological literature, giving the arguments pro and con, and the experience of the various investigators as to the value of transillumination as a diagnostic measure.

Voltolini was the first to describe in detail the various methods of transillumination for investigating the nose and throat. He described the following methods:

1. A strong light is projected upon the exterior of the nose, and the nostril examined by means of a speculum, from which all light is excluded as much as possible.

2. A strong light is projected into one nostril, while the other nostril is examined by the speculum.

3. Introducing a mirror, as in posterior rhinoscopy, and throwing a strong light upon it while the anterior nares are inspected.

4. Examining the nose while an electric light is placed in the mouth.

5. Introducing a small incandescent lamp into the naso-

pharynx. The velum is thereby seen strongly illuminated, and the nares may be inspected by means of the nasal speculum.

6. Placing an incandescent lamp in the mouth and observing the transillumination of the antrum of Highmore and cheek. This method was afterward elaborated by Heryng.

7. Projecting a light from an incandescent lamp upon the external part of the larynx and trachea, and inspecting the interior of the larynx with the laryngoscopic mirror.

Transillumination has also been used in connection with the ear.

8. The light from an incandescent lamp is projected externally on the mastoid cells, and the auricular canal examined by means of an aural speculum.

Antrum of Highmore.

In order to appreciate the true value of transillumination in the diagnosis of empyema of the antrum of Highmore, it is important that the source of light should be of sufficient intensity and that the room should be properly darkened.

After a careful test of a large number of the antrum lamps sold by dealers for this purpose, it is not surprising that such various results have been obtained with this method, as the majority of lamps examined did not have the requisite amount of illumination. The power of the lamp should be five candle-power; less than this will not give sufficient brilliancy, except in rare cases, and greater than this will give such intensity that it will deprive this method of its delicacy.

In view of the different conformations of the bones of the face, as shown by the investigations of Zukerkandl

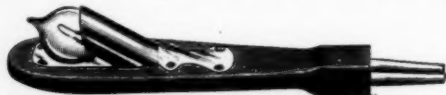


Fig. 1. Tongue-Depressor with Incandescent Lamp.

and others, and their variations in density and thickness in different individuals, it can be easily understood that the same degree of light is not applicable in all cases, and it is, therefore, preferable that the degree of light be varied by means of a rheostat until the proper degree of

transillumination is obtained. By this means, the results obtained are more definite and reliable.

For transillumination, an incandescent lamp attached to a tongue depressor, as shown in figures 1 and 2, may be used. A superior instrument is the one devised by Heryng (figure 3). In the original Heryng's lamp sent

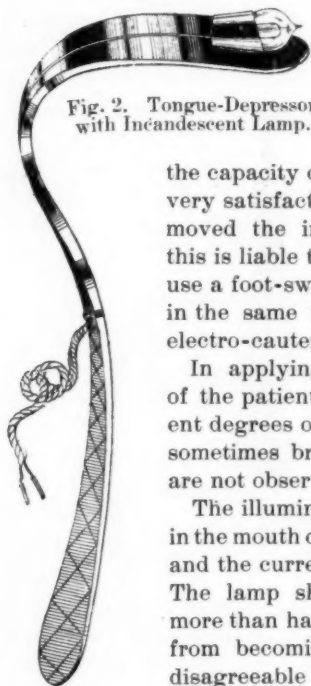


Fig. 2. Tongue-Depressor with Incandescent Lamp.

me by Tiemann & Co., the lamp did not have a sufficient capacity, so that the results obtained were unsatisfactory. By my suggestion, however, they have increased

the capacity of the lamp, and it now gives very satisfactory results. I have also removed the interrupter from the handle, as this is liable to become out of order, and I use a foot-switch for completing the circuit, in the same manner in which I apply the electro-cautery.

In applying these instruments the face of the patient should be tested with different degrees of light, as the diminished light sometimes brings out points of detail that are not observed with the brighter light.

The illuminator should be carefully placed in the mouth of the patient, the mouth closed, and the current turned into the illuminator. The lamp should not be left in position more than half a minute, so as to prevent it from becoming so heated as to make it disagreeable or even painful to the patient.

Where there is an artificial set of teeth, this should be removed before the test is made. Before removing the illuminator from the mouth the current should be turned off, so as to avoid the possibility of burning the patient while removing the instrument.

Various experimentors have devised different forms of lamps for transillumination, but Heryng's is still the most useful. Chevalier Jackson, Pittsburg, however, has devised a transilluminator (figure 4,) which has the advantage of a wide range of applicability. It consists of a German silver lamp box, polished within, blackened without, and containing a 50 candle-power incandescent lamp.

Projecting from the side of the box is a metal neck, into which fits a perforated asbestos cork. Through this cork passes a glass rod (A), which is silvered all over except the ends, the silvering being protected by a layer of enamel. The brilliant light within the box is transmitted axially through this rod, without lateral radiation, and issues from the distal end with undiminished intensity. A cloth skirt, not shown in the cut, hangs from the lower rim, preventing any radiation of light from the open air channel; and from the bottom of the lamp socket issues an ordinary

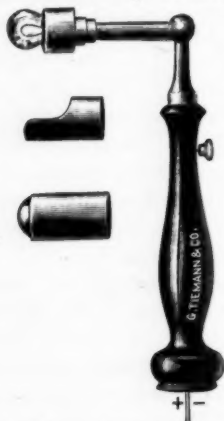


Fig. 3. Heryng's Antrum Illuminator.

flexible double cord, 2 meters in length, ending in an "attachment plug."

An incandescent lamp anywhere can be withdrawn from its socket and this "plug" substituted, when the transilluminator is ready for use. When the slightly warm distal end of the glass rod is passed up behind the palate, and the patient's lips closed, inspection through the anterior nares shows the nasal chambers to be brilliantly illuminated. A retractor should be used to draw the palate forward while the tip of the rod goes into place, after which it is removed, and the patient closes his lips around the shaft of the rod.

When the glass rod is placed on the tongue, the distal concavity forward, transillumination of the antrum is had. In this position, too, the nasal cavities are transilluminated, the outer wall under the overhanging inferior turbinate. The single curved rod (B) is used where its shape is more convenient. The distal end in one nostril illuminates the other nasal chamber; placed externally over the

thyroid cartilage, the larynx may be seen with the laryngoscope with the light transmitted through the tissues. Thus can be executed the whole list of Voltolini's procedures, and many others. The room should be dark to obtain the best results.

The glass rod does not become heated, wherein is a great advantage. The lamp soon becomes hot, but if desired it can be made double-walled, with a layer of asbestos between, though this makes a more expensive instrument.

In an ordinary antrum illuminator, a five candle-power lamp gives the proper amount of illumination. Where this is used in connection with the incandescent street service, a resistance of one 50 candle-power lamp, or three 16 candle-power lamps, is required. These lamps may also be used in connection with the shunt rheostats,

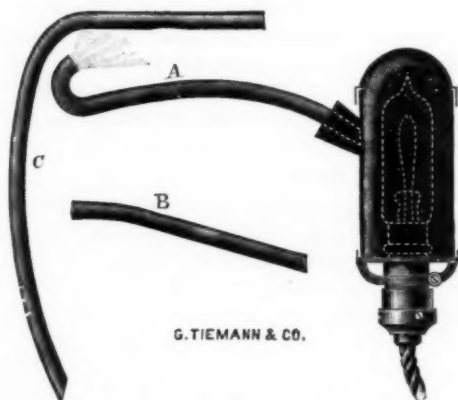


Fig. 4. Chevalier Jackson's Lamp for Transillumination.

storage batteries, motor dynamos, or the chemical batteries that are used to operate the electro-cautery.

An important point is that the room should be totally darkened. Where this is not feasible, a cloth such as the photographers use may be throw over the head and shoulders of the examining physician and patient, which will usually give sufficient darkness for the examination.

The diagnosis of empyema of the maxillary sinus by transillumination may be considered under the following heads:

1. Opacity of the cheek of the affected side, or the method of Voltolini-Heryng.

2. Opacity of the pupil of the affected side, or the method of Davidsohn.

3. Absence of the luminous sensation of the diseased side, or the method of Garel.

Each of these methods may be modified by placing the lamp laterally in the mouth, that is, directly under the maxillary sinus and not under the nasal fossæ, according to the method of Ruault (1).

4. Opacity of the nasal wall of the sinus observed by rhinoscopy, or the method of Robertson. This method is difficult to prove, and is rarely used.

Voltolini-Heryng's Method.

In 1890, Theodor Heryng (2) was able to illuminate the antrum of Highmore by using a 5 volt incandescent lamp attached to a tongue-depressor. He succeeded in more than 30 cases in diagnosing latent empyema without exploratory puncture, the diagnosis being corroborated by the subsequent removal of pus. Since using this method he has been able to diagnose empyema of the antrum much more frequently than formerly, and he, therefore, gives great weight to this method.

When he first published this method, it was a distinct advance in the methods of diagnosing the various pathological conditions of these parts; but, as usual, its value was overestimated, and the reaction caused the pendulum to swing in the opposite direction, and this process was soon much undervalued. The true state of the case is, that it is a valuable addition to our means of examination, and has the advantage of being quickly and readily applied. It must, however, be corroborated by other signs.

■ In considering the value of transillumination as a diagnostic measure in diseases of the maxillary sinuses, it will be interesting to note the objections which have been offered against it. Among these are the following:

1. When the pus has been evacuated, the diagnostic absence of transparency persists, indicating that this does not depend only upon the presence of the pus. 2. In healthy individuals, translucidity of the antrum is sometimes not obtained. 3. In some cases of unilateral empyema, both sides of the face are transparent, indicating that the presence of pus does not always influence the degree of transillumination.

From an examination of a number of cases of empyema of the maxillary sinus in Jurasz Clinic, Chaney (3), of Bristol, states that transillumination is not an absolutely sure means of diagnosis and cannot be relied upon in doubtful cases.

Gouguenheim (4) states that transillumination is embarrassing, as it always leaves us in doubt. In a case in his practice, on finding a beautiful sub-orbital umbra, and then opening the maxillary sinus, he found no pus. The presence of an umbra, therefore, is not a decided indication of pus, but it may be a positive sign of some pathological condition of the antral mucosa.

Robertson (30) found that on opening an antrum containing much pus, and which had given a decided umbra on transillumination, after thorough irrigation, gave the same umbra as before. This observation has also been referred to by Moreau Brown (31), Chicago.

The articles published by Raulin, Wiebe, Schech, Freudenthal, Walter, Heymann, Ziem and Srebrny, also indicate that they accord but little value to transillumination as a means of diagnosis.

Transillumination is also considered of little diagnostic value by Lichwitz, of Bordeaux, and Hartmann (5), because the luminous rays projected into the sinus originate not only from their direct source, the mouth, but also indirectly through the nostrils. The cavity is thus illuminated from the nostrils and causing the antrum to appear translucent even when it contains a certain amount of pus.

The majority of writers, however, agree that this procedure has considerable merit, some even being enthusiastic in its praise.

The illumination of these cavities by the mouth-lamp is believed by W. H. Fletcher (6), Cincinnati, to be a most valuable adjunct to the diagnostic symptoms. The cases to which he refers in his article have all shown the diagnostic shadow.

Schleicher (7) has examined a large number of cases by transillumination, and considers it one of the best methods for the diagnosis of the presence or absence of pus in the antrum of Highmore, without, however, being applicable in all cases.

Moritz Schmidt (8) states that while the transillumination of the antrum is not entirely reliable, it recommends

itself on account of its rapidity and simplicity. The unilateral darkening of the cheek may be due to a peculiar anatomical formation of the maxilla, obstruction of the nose with polypi, or a pathological condition of the maxilla. A serous exudate in the maxilla does not prevent transillumination. Sajous (9), Paris, also states that while the method of transillumination cannot be considered as an infallible one, still methods of any kind possessing all the requirements of perfection are indeed few.

Heryng insists that the value of transillumination should not be underestimated, and states that the method has been criticised by persons who do not understand it, and who are not familiar with the method. He calls attention to certain sources of error and lays great stress upon the absolute darkening of the examination room.

Garel (10), Lyons, says that electrical illumination by transparency is the best proof when we suspect the existence of empyema of the maxillary sinus from the ordinary symptoms complained of by the patient. He, therefore, attaches much value to transillumination in the diagnosis of empyema of the antrum. G. W. Caldwell (11) calls attention to the fact that where large mucous polypi are present in the nasal cavity, they may cause a concentration of light and increased brilliancy of the bones of the face, thus confusing the ordinary signs of transillumination.

Davidsohn's Method.

After a systematic investigation of the value of transillumination, as suggested by Heryng and Voltolini, H. Davidsohn (12) claims that the most important evidence is not the *transillumination* of the cheek, but of the *retina of the eye*, and he considers the latter the only reliable and valuable sign in the diagnosis of empyema of the antrum of Highmore. He claims that this method demonstrates with absolute certainty the absence or presence of an empyema of the antrum of Highmore without the necessity of an exploratory syringing, as recommended by Lichtwitz and Ziem.

When Davidsohn introduced an electric lamp into the mouth, he observed in normal subjects a red illumination of the retina, surrounded by a dark circulatory zone. He claimed that this phenomena was produced only when the

maxillary sinus was free of pus, and that, on the other hand, this phenomena was never present when the antrum was filled with purulent secretions; that the transillumination of the eye is prevented by even the smallest amount of pus in the antrum. The pupil is, at the same time, of medium size, occasionally even dilated to its maximum. The dark ring around the orbit is the shadow of the fat capsule surrounding the eye. If the eye remains darkened, this cannot be considered as absolutely indicating the presence of pus under all circumstances, because in abnormal conditions of the maxillary bone, the light cannot penetrate to the orbit.

In the discussion of this subject, Flatau (13) states that he does not believe in the accuracy of the observation that the pupil cannot be illuminated where pus is in the antrum, as he has seen the opposite result in his own observations. This has also been the experience of Heymann and Scheinmann who have likewise seen the persistence of the darkening of the pupil even months after the pus had disappeared from the cavity.

As a proof of this theory, however, Davidsohn (14) reported that he had filled a number of antra with milk, and had never found the illumination of the pupil present when this had been done.

Zeim (15), of Dantzig, denies the value of this method, and shows at length how these luminous rays may penetrate from the diaphanoscope (antrum illuminator) into the orbit through the nasal cavities without first passing through the antrum, on account of the anatomical condition of these cavities in many cases.

He shows that in the normal antrum sufficient light does not penetrate through the nasal cavities into the orbit to cause the illumination of the retina, but in abnormal cases there would be little or no interception of the rays, even if the cavities were filled with a purulent secretion, so that this method, in these cases, would not only be without value, but would even lead us to suppose that a negative condition existed, whereas one or both the cavities might be filled with the result of a chronic suppurative inflammation.

Herzfeld (16) also credits little value to Davidsohn's method of transillumination. B. Fränkel (14) warns that too much credence should not be placed in the illumina-

tion of the cheek or eye, as it may lead to disagreeable results. In two cases in which, guided by this method, he had performed an exploratory puncture, he had had negative results. Davidsohn (17), however, supports his view of the value of transillumination of the pupil by the observation of 13 cases, as showing the reliability of this sign, even when the smallest amount of pus is present in the antral cavity.

Stevenson (18) calls attention to the fact that this illumination of the retina may be of value in *ophthalmology*, as it permits the fundus oculi to be seen without the simultaneous contraction of the pupil.

As regards the value of Davidsohn's method, this is subject to the same conditions which influence the value of the other methods of transillumination. Like these methods it is of importance only in connection with other symptoms. If there is pus in the middle meatus of one side, or, with or without this, certain subjective symptoms are complained of that we associate with empyema of the antrum, and if, in addition to these symptoms, the affected side of the face is darkened and also the pupil, in contrast with the opposite side of the face, we may consider this strong corroborative evidence, which would justify us in making an exploratory puncture in cases in which the normal opening (ostium maxillare) cannot be found and catheterized.

While Ziem (15) is correct in his statement that the actual syringing of the antrum is the only absolutely reliable method of diagnosing the presence or absence of empyema of this cavity, still this method, if carried out through the normal opening requires considerable time, patience and skill, is unpleasant and even painful to the patient in spite of the application of cocaine, whose effect must not be regarded entirely with indifference in these cases. In addition to this, there are many cases in which the finding of the natural opening is extremely difficult and even impossible, as has been maintained by Stoerk and other observers of the highest experience. An exploratory puncture for making the diagnostic syringing is an operation that is likely to be objected to by the patient, and requires the usual care and precaution incident to a minor operation. The puncture, therefore, should not be made unless the symptoms pointing to an empyema are fairly positive in character.

Garel's Method.

Garel (10), of Lyons, has observed that the electric lamp in the mouth of a healthy subject whose eyes are closed, causes the patient to perceive a *luminous impression* in the lower part of the retina, due to the transmission of light. In a number of cases affected with empyema, he found that this luminous perception was absent on the side of the face in which pus was in the antrum. Burger (19), of Amsterdam, while favoring Davidsohn's method of transillumination, contends that luminous sensations of the eyeball are far more delicate tests than illumination. Herzfeld (20), on the other hand, from the extensive experiments which he has made, states that unilateral light in the face or pupil does not exclude the possibility of pus in the antrum, and that both pupils may remain dark without being due to pus, as this also occurs in healthy subjects; that the lighting up of one pupil may serve as collateral evidence only when the symptoms point toward the presence of empyema.

This phenomena has been extensively experimented with as with the other methods, the results showing that the value of this symptom is influenced by the same conditions which effect the usefulness of the methods described by Heryng, Voltolini, and Davidsohn, in that it is influenced not only by the pathological conditions of the antrum, but sometimes also by the anatomical peculiarities of the parts, regardless of the pathological conditions of the antrum itself.

A modification of the method of transillumination as practiced after the Voltolini-Heryng method, has been suggested by A. Ruault at the meeting of the Paris Society of Laryngology (1), the author claiming that it presents advantages over the ordinary methods used.

In healthy subjects, who possess normal translucidity without modifications due to anomalies of the conformation and thickness of the osseous walls, he has observed a *certain number of zones* in the adult, which are *more strongly illuminated* than the neighboring parts. When the lower part of the face corresponding to the dental arches and the alveolar borders of the superior maxilla is very clearly illuminated, the middle part of the cheek is darker as far as the inferior orbital arch, and above this, there is a zone more clear in the form of a cross answering

to the lower eyelid. But when an electric lamp giving sufficient light is applied in a certain manner, there is on each side at the level of the nasal bone a clear zone irregularly oval, less bright than the neighboring palpebral region, but clearly distinct from the other darker parts.

These clear zones are often absent when the lamp is placed in the middle of the mouth on the median part of the back of the tongue, for, according as the subject has a narrow nose or tumefaction of the inferior turbinates, the illumination of the upper part of the nose is poor; the luminous rays having traversed the palatine arch at the level of the floor of the nasal fossæ, are arrested by the projections formed by the turbinates, especially the inferior. But if care is taken to place the lamp in the mouth *laterally*, that is, below the lower wall of the maxillary sinus, and not below the floor of the nasal fossæ, the region in the proper bones of the nose is clearly illuminated, the luminous rays traversing the maxillary sinus and the anterior ethmoidal cells.

This fact has not yet been noticed, probably because observers have been directing their attention to the examination of the transparency of the cheeks and lower eyelids; but it is easy to see if a lamp of sufficient intensity is employed.

Transillumination in Normal Subjects.

In order to observe the effects of electric transillumination of the bones of the face in the normal subject, with a view of comparing the results obtained with those of patients affected with disease of the antrum of Highmore, Holger Mygind (21), of Copenhagen, has made an examination of 200 healthy individuals, the persons examined being of both sexes and the ages varying from 2 to 76 years. The results observed by means of electric transillumination of the face were quite dissimilar in different individuals. In the thin, slightly-built individuals, especially females, the transillumination is very intense, but not so in the majority of cases. In many of the persons examined, the pupils remained dark. A considerable minority exhibited the phenomena but slightly. This group consisted chiefly of strongly-built men, principally of dark complexion, and of well developed adipose tissue. In this group the pupils always remain dark.

In referring to the transillumination of the pupil, as described by Davidsohn (22), Mygind admits that this transillumination is principally produced by the light from the mouth penetrating through the floor and roof of the antrum, but believes that there is a possibility that some light penetrates from the nasal cavity into the orbit through the inner wall of the orbit. This light is sometimes sufficient, when the bones and mucous membranes are thin, to illuminate the pupil even if no light penetrates the antrum, as would be the case if pus were present in that cavity. In many of the healthy individuals examined, the transillumination of the two pupils was unequal, and, in 4 per cent. of all the cases, one pupil was distinctly though slightly illuminated, while the other remained perfectly dark.

In regard to the reliability of Davidsohn's phenomena, as a basis for the diagnosis of pus in the antrum, Mygind found that one-third of all the cases examined exhibited perfectly dark pupils under transillumination of the bones of the face. The lamp used was constructed by Vohsen (23), and it was brought to a bright incandescence, so that the failure of this phenomena was apparently not due to any defect of light, but to anatomical conditions. In regard to sex, 30 per cent. of the females examined exhibited non-illumination of the pupils, while this was the case with 62 per cent. of the males examined.

This difference can be naturally explained by the variation of thickness of the bones in the two sexes. The effect of transillumination on the pupil was found to vary with the consistency of the mucous membrane of the palate, the thickness and structure of the bones of the face, the consistency of the mucous membrane of the antrum of Highmore, abnormality in the size and shape of the antrum, the consistency and extent of the fatty layer of the orbits, and even the physical condition of the *bulbus oculi*.

More favorable results, as regards the efficiency of transillumination in healthy persons, were obtained by J. A. Wilkens (24). From the examination of a large number of individuals, who were not affected with any nasal disease, this investigator found a complete transparency of the cheek in 51 per cent. of the cases, a partial transparency in 37 per cent. of the cases, and a complete opacity in only 9 per cent. The pupils were illuminated in 74 per

cent. of the cases, and the subjective perception of light existed on both sides in 97 per cent. of the persons examined.

In 23 cases of acute unilateral empyema of the maxillary sinus, the Heryng symptom existed in 19 cases. In 3 cases the corresponding cheek was not absolutely opaque, but less transparent than the cheek of the opposite side. In the last case, however, the two cheeks were equally transparent. The symptoms of Davidsohn and Garel were present in each case of acute empyema without exception.

In 16 cases of chronic empyema, the Heryng symptom was very marked in 10 cases; that of Davidsohn 13 times, and that of Garel 13 times. The first of these symptoms was present, but less marked in 2 cases; the second in 1 case, and the third in 1 case. In short, a complete absence was shown with the first method in 4 cases; in the second in 2 cases, and in the third in 2 cases.

In six cases of bilateral empyema, the symptom of Heryng was shown each time, as also that of Davidsohn. The symptom of Garel was absent four times.

The absence of transparency in empyema of the maxillary sinus does not depend only on the absence of pus, but also on hyperemia, infiltration and thickening of the wall. This explains one of the objections which have been brought against this method, that the opacity usually persists even after the injection and complete cleansing of the sinus. After the cure of empyema the transparency reappears, either fully or in part. If the opacity persists, the cure is doubtful. The exploratory puncture, which is followed by a positive result, has been considered as a certain diagnostic method, but if this gives a negative result, it is not absolutely conclusive that the sinus is healthy. The puncture should be used only when the other signs are insufficient to serve as a basis of diagnosis.

Wilkins also considers transillumination of value, not only as a means of diagnosis, but, as already explained, an indication of the cure or progress of a case. He believes that the darkness on the affected side is not only due to the interference of light by means of pus, but also by the condition of the mucous membrane of the cavity, such as hyperemia, infiltration and thickening. He thinks, therefore, that non-illumination of the antrum may indicate a pathological condition, even where no pus is pres-

ent, and that transillumination is a much simpler and more harmless method than the other means used for diagnosis, and can do no harm, and may sometimes reveal the presence of an unsuspected latent empyema. He does not claim it to be an infallible diagnostic method, but believes it to be a valuable aid in the diagnosis of sinusitis.

These statistics prove that while the method of transillumination is not of absolute certainty, it is, nevertheless, in the majority of cases a valuable diagnostic measure.

The principle of transillumination is demonstrated in the section (figure 5). On the left side, the large size of

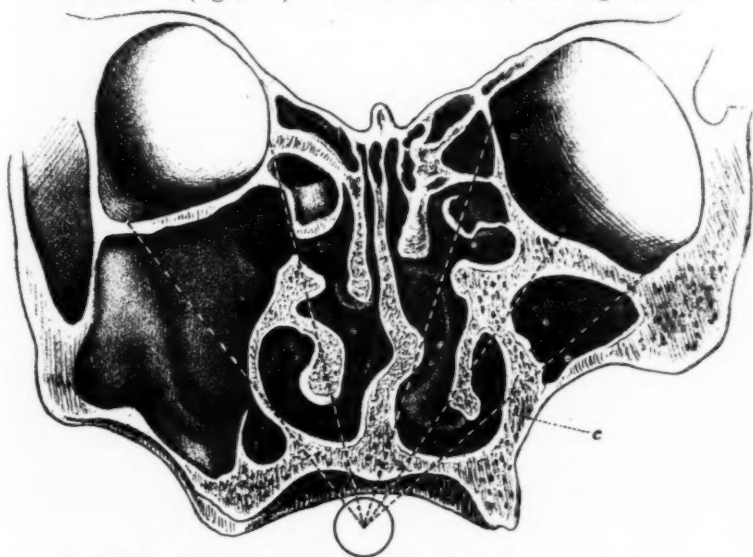


Fig. 5. Transillumination of the Antrum of Highmore.

the antrum and the corresponding thinness of its walls, and the fact that all the rays which reach the eye must first pass through this cavity, would make this an excellent case for the various methods of transillumination—Volto-
lini-Heryng's, Davidsohn's and Garel's.

If the sinus is free from secretion, this case would show transillumination of the cheek, illumination of the retina, and the subjective perception of light.

The other side of the section, however, would lead to embarrassing results from transillumination, the small size of the cavity and the thickness of the surrounding wall

would inhibit the various phenomena of transillumination. If this small sinus were filled with purulent secretion, it would not materially change the character of the results of transillumination on this side. Fortunately, however, this is an exceptional case, and it is only comparatively few cases which exhibit such a variation from the regular anatomical structure.

The value of transillumination would seem to depend upon the question as to whether pus in the antrum would always prevent the illumination of these cavities, or the illumination of the eye.

While the researches on the normal subject have shown that non-illumination may also take place, in a small percentage of cases, in subjects in whom the antrum of Highmore is not affected, still, if this were the only objection, it would still be of value if only in a negative capacity. This, however, is not always the case, and I have seen occasional subjects, in which the transillumination was quite brilliant, in which an exploratory puncture or the catheterization of the normal opening afterward showed that the cavities were completely filled with pus.

On the other hand, as this method is so easily accomplished, and requires no dexterity on the part of the physician or pain or inconvenience on the part of the patient, and as the results obtained have certainly been valuable in a large number of cases, this method will, therefore, be useful, although not entirely reliable, in making the diagnosis of pus in the antrum of Highmore.

We should, therefore, not underestimate the value of the different methods of transillumination for the diagnosis of antral disease, and every one who has made an extensive and impartial trial of these methods will admit that they have proved of great assistance in many cases, although they may be occasionally misleading.

Nasal Septum, Frontal Sinus, Ethmoidal and Mastoid Cells.

While the bulk of literature on transillumination in rhinologic practice has been expended on its value in the diagnosis of the maxillary sinuses, this method has also been applied, though to a limited extent, in the examination of the other accessory sinuses.

For the frontal and ethmoidal cells the Heryng lamp

(figure 3,) is also applicable, but the cylindrical cap should be attached instead of the tongue-depressor. In order to avoid the possibility of giving the patient pain during the examination, from the heat of the lamp or cap, I attach a short rubber tube over the cap, and as only the rubber comes in contact with the face of the patient but little heat is transmitted. The rubber with the lamp inserted is then placed in the angle between the nose and eyebrows and directed upward. In some cases the frontal sinus will be sufficiently illuminated to show its whole dimension; in many cases, however, the results are unsatisfactory.

J. H. Martindale (25) has also devised an electric lamp, by means of which the thickening of the *septum* may be estimated, so as to avoid perforation in septal operations.

The *ethmoidal cells* are usually considered beyond the reach of the methods of transillumination, but George C. Caldwell (11) claims that this region may also be reached by this method. He uses a small lamp, such as is used for the mastoid cells, and applies it to the orbital tissue between the pupil and the inner wall of the orbit, and can see through the naris the illumination of the ethmoidal cells and the superior meatus. He claims that transillumination is one of our most valuable diagnostic methods. It is easy of application, and causes no inconvenience to the patient.

Transillumination is also considered of importance in the diagnosis of empyema of the frontal sinus by Vohsen (22). The apparatus which he uses for this purpose is similar to the attachment of Heryng's lamp already described, and consists of a strong rubber tube 4 c.m. long attached to the end of the lamp container, the free end of the tube being applied to the base of the frontal sinus behind the supra-orbital border, so that the light penetrates the frontal sinus.

Heryng has used transillumination of the frontal sinus through the nasal chambers, and of the mastoid process from the external auricular canal.

The disadvantage of examining the frontal sinus by transillumination is principally due to its anatomical conditions. In suppurative processes of the maxillary sinus the opening, through which the secretion is discharged into the nasal chambers (ductus maxillaris), is at the

upper part of the cavity, so that the sinus is almost filled with secretion when the head is in the upright position. In the frontal sinus, however, under similar circumstances, the sinus frees itself of its discharge, as the point of drainage is in the lowest part of the cavity. This, of course, does not refer to obstructive lesions; the pain, pressure and general disturbance, due to this condition, are usually sufficiently plain without the assistance of transillumination. The interference with the transmitted light due to the presence of pus, which is present in empyema of the maxillary sinus, is, therefore, rarely seen in the frontal sinus.

Ziem (26) has also little faith in the transillumination of the frontal sinus. He states that syringing out the cavity is the only sure diagnostic method.

In the method suggested by Heryng of examining the frontal sinus through the nasal passage, the objection is that the result may be vitiated not only by anatomical conditions of the frontal sinus, but also of the nasal chambers and ethmoidal cells, which may intercept the rays regardless of the condition of the frontal sinus.

Ruault (1) states that his method of examining the antrum by placing the lamp laterally in the mouth is also useful in the diagnosis of suppurative processes in the ethmoidal cells and of the frontal sinus. In his opinion, the presence of the obscurity of the region of the nasal bones in a subject presenting a purulent flow from the meatus of the same side, at the same time as translucidity of the corresponding maxillary sinus, is a diagnostic point of great value. It indicates suppuration in the region of the anterior ethmoidal cells, whether primary or secondary, and inflammation of the frontal sinus. He has found this sign present a number of times in patients with inflammation of the frontal and ethmoidal sinuses, and in those with syphilitic lesions of the same region; and, although he is far from attributing a pathognomic value to it, he considers it to be a sign, the detection of which should not be neglected.

Transillumination has also been used in the diagnosis of inflammatory processes in the *mastoid cells*. A lamp protected with a rubber tube (figure 3), such as is used for the frontal sinus, is applied to the mastoid cells, and the auricular canal is examined by means of a speculum from which all light has been excluded as far as possible.

In cases in which the pneumatic cells of the mastoid are filled with pus, the transillumination may be entirely absent and is usually markedly diminished. Even in cases in which the lining membrane of the cells is thickened by hyperemia or inflammation, the full effect of transillumination is interfered with.

The results of transillumination in these cases are effected by anatomical peculiarities of the location and density of the cells to be examined, which influences the value of this method. In some cases, however, the comparison of the effects with those obtained in the opposite ear is of diagnostic value, and should not be neglected in the differential diagnosis of cases in which inflammation of the mastoid cells is suspected.

This method has also been tried by projecting a strong light into the auricular canal and examining the external mastoid cells in a darkened room; but I have never been able to obtain satisfactory results from this method.

Larynx.

Czermak (8) was the first to describe the transillumination of the larynx, this method being afterward elaborated by Stoerk, Voltolini and others. In the method, as first practiced, the source of illumination was either gas or sunlight, but the results were so unsatisfactory that the method was soon abandoned. Voltolini (27), of Breslau, was the first to apply the incandescent electric lamp for this purpose. He made use of an incandescent lamp, 4 c.m. in diameter, whose posterior surface was coated with mirror amalgam. In front of the lamp a glass ball, filled with cold water, prevented the heating of the lamp, and, at the same time, answered the purpose of a bi-convex lens. The larynx was then examined with the mirror in the usual manner, except that no light was used than what was transmitted through the tissues of the neck.

Voltolini pointed out the advantages of this method of examining the internal structure of the larynx, and demonstrated its effect in a number of normal and diseased individuals. He found it especially applicable in cases of neoplasms situated far down in the trachea, and in granulations of the larynx, which are difficult to reach by the ordinary method.

Roth, in order to illuminate the larynx, made use of a

lamp, the rays of which were conducted into the parts by means of a cylindrical rod of glass. This has the advantage that the glass does not become heated, and that the illuminated area may be confined to any part of the larynx. Chevalier Jackson's transilluminator (figure 4) is also made on this principle, and may be used in a like manner.

The most complete instrument for examining the larynx by transillumination is the modification of Heryng's antrum illuminator, the cylindrical piece with rubber tube protector being attached instead of the tongue-depressor, as in the examination of the frontal sinus. The room is then thoroughly darkened and the larynx examined with a laryngoscopic mirror, as by ordinary laryngoscopy, the only light which is used being transmitted through the tissues of the larynx.

Heryng, who has used this method, insists upon the total darkening of the examining chamber. Gottstein (28) states that the incandescent lamp gives the best results when applied to two points: First, in the region between the superior border of the *promum Adami* and the hyoid bone; and, second, in the cricoid region. In the first position the whole interior of the larynx is beautifully transilluminated and the epiglottis less so.

In some individuals, especially women, with upright larynxes, the light is projected upward as far as the uvula and velum, so that there is a rosy appearance as soon as the mouth is opened. When the lamp is applied to the region of the cricoid cartilage, the trachea and the vocal cords appear a blood red, while the upper part of the larynx is dark. In order to illuminate the pyriform sinuses, the incandescent lamp should be applied to the right or to the left upper band of the thyroid cartilage.

In regard to the diagnostic value of transillumination of the larynx, it does not enable us to diagnosticate inflammatory processes, as the normal red and the inflammatory red appear of one color, and even anemic conditions are difficult to distinguish. Changes in the structures of the larynx, however, such as infiltrations, neoplasms, etc., may be distinguished, but not as clearly as when the light is transmitted directly into the larynx. Voltolini's view, that this method might enable us to diagnosticate changes in the tissues of the tracheal wall, in the vocal bands and

other parts of the larynx has not been substantiated by subsequent observers.

Transillumination of the larynx, as advocated by Volto-
lini, has not been found very useful by Gottstein (29), of
Breslau, who has not succeeded in seeing more by this
method than with ordinary methods of laryngoscopy—on
the contrary, usually much less. Seifert, of Würzburg,
believes that the examination should be made from differ-
ent parts of the larynx before it is abandoned, as advised
by Schrötter.

A special advantage of transillumination of the larynx,
and one which I have not seen referred to in the literature
of this subject, is in the location of foreign bodies. When
a five candle-power incandescent lamp is applied to the
larynx in the manner already described, all the tissues of
the parts take on a roseate hue, which reminds one of the
the setting sun. If now there is a foreign body in the
larynx, its opacity at once distinguishes it from the sur-
rounding tissues.

One case, in which I applied this method, was that of a
young man who had inspired a collar button into his
larynx. The location of this foreign body by the ordinary
laryngoscopic mirror was exceedingly difficult on account
of the neutral color of the foreign body and its location
below the vocal cord. When the incandescent lamp was
then applied to the external part of the thyroid cartilage
and transillumination effected, the foreign body stood out
as an opaque mass among the surrounding tissues, show-
ing not only its location, but also its form. This foreign
body was afterward also located by means of the sun rays
reflected into the larynx.

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REPORT OF A CASE OF DOUBLE MASTOID DISEASE, FOLLOWED BY ABSCESS OF THE SPHENO-MAXILLARY FOSSA AND NECK; RECOVERY.*

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The question of operative interference in cases of acute middle ear inflammation, with mastoid infiltration and pus building, is one of interest at all times to those who are familiar with this field.

Opinions are as yet somewhat divided, although the tendency is toward radical measures. There are those who still hold to conservative methods in the majority of cases, while others advocate early operations. Results of numerous reported cases, it seems, in the mind of the writer, will justify a departure from our former timid practice to the adoption of a bolder procedure in many instances, much to the relief of the patient, and saving of time, as well as the preservation of hearing, and even life itself. The close proximity of the attic to the lower wall of the cerebral cavity, the position of the antrum with its floor so much below the level of the aditus that pus will remain in its cavity for an indefinite period, the easy gravitation of pus from the cells of the mastoid into the antrum, the corresponding difficulty in the matter of adequate drainage through the tympanum are, of themselves on physical grounds, arguments in favor of an early external opening. Added to this the far more important rea-

*Read before the Western Ophthalmological, Otological, Laryngological and Rhinological Association, St. Louis, Mo., April 8-9 1897.

son of caries of the cells extending backward toward the lateral sinus, and upward into the middle cerebral fossa, enhances the benefits to be derived from early liberation of the pus by an opening; while it adds very greatly to the dangers caused by delay, and the unwarranted continuation of "dilly-dally" methods which, at best, in the event of recovery, are almost sure to result in more or less pronounced deafness. Rules as to when to operate, and upon what class of cases to operate, would be valuable to us if



The catgut ligature passes in at the lower part of the wound in the neck and comes out at the mastoid, the thread is laid up over the ear to show the track of the wound, which is now united.

it were possible to always determine all the factors that go to make up the cases. These are, however, not easy of access. The one general proposition of surgery, that wherever there is pus it should be let out, should be our guide. Every case is a case of its own, and to this fact should be coupled our judgment in each individual instance; with a leaning rather toward earlier operation, than by delay, allow the patient to pass the border line of safety into the dangerous grounds of meningeal inflammation and subdural abscess.

The writer submits a report of the following case as il-

lustrating the position which he now holds, after some 20 years of practice, during which time he had leaned to conservative methods, and operated in many cases reluctantly after he had found milder methods inadequate or dangerous:

Mrs. W——, wife of a physician, a lady of middle age, with no tuberculous history, having always enjoyed fair health, was seized with a severe attack of influenza in February, 1896. The attack lasted several weeks, during which time ordinary methods were employed by her husband. The nasal passages had been sprayed out from time to time, and general treatment kept up, the details of which were not inquired into. Suffice it to say that on March 10, 1896, whether from the spraying or from the renewed onset of the inflammation it is difficult to say, both middle ears filled up with exudate; hearing ceased, pain followed, with increase of temperature, and the writer was asked to see the case.

Status præsens: Membranæ tympani both red and bulging, umbo obliterated on both sides, malleus handle apparently depressed, lying in a groove caused by the outward displacement of the membranes; pain unbearable; no discharge. Hot fomentations had been in use about 48 hours. After syringing out the ears with hot borax water, a free paracentesis was made on both sides, which was followed by the escape of a moderate sero-sanguinous exudate. Leeches were then ordered to be applied to both sides, to be followed by hot douches and the cautious administration of hypodermics.

In the right ear the effect was all that could be desired, while the progress was slow, and the mastoid was very tender, and at frequent intervals during the next few weeks became threatening, the discharge was kept up until such a time as catheterization could be occasionally done, which was followed by an uneventful recovery.

The left side, however, did not behave so well. The alleviation was only temporary. The bodily temperature rose to 103°, pain continued and spread over the temporal, mastoid and occipital regions, with cessation of the discharge, and it was found inadvisable to allow prolonged use of morphia, which only produced fitful snatches of rest, to be followed by beginning signs of delirium, so that on the fourth day (March 13,) the left mastoid was opened under ether anæsthesia. A large incision was made, drill, curette and chisel were used, until the whole external wall over the antrum was removed, and cautiously continuing the operation communication was established with the attic, and another free incision was made in drum membrane behind the malleus handle.

A marked period of relief followed this operation, so that bright prospects for an early recovery were in view. But this was only to last about three or four days. On the 16th there was much pain and an increase of temperature, but no delirium. The seat of pain was now transferred to the zygomatic and upper maxillary regions. Transillumination, through the mouth and posterior nares, revealed pus in the antrum of Highmore on the left side. Accord-

ingly, under nitrous oxide gas anæsthesia, the second bicuspid tooth of the upper jaw was removed, and with a dental engine and drill an opening was made into the antrum of Highmore, from which the pus escaped in liberal quantities. Progress was now very much advanced, although the patient was emaciated and weak from suffering and poor digestion, until the end of the fourth week from this operation, when another relapse occurred. About this time the discharge in the left ear had ceased, the mastoid opening had filled with granulations, and yet there was much pain and a return of the temperature. The maxillary antrum had been kept clean, as well as the mastoid opening, and the former had continued to discharge. The catheter could be introduced and the drums of both sides inflated, and the hearing was becoming nearly normal again. But on the 10th of April great tenderness and swelling began behind the ramus of the jaw, and all along the anterior border of the sterno-cleido-mastoid muscle. This progressed so rapidly that on the 15th the temperature again arose to 103°. Short, broken, wheezy, almost emphysematous respiration appeared, and septic pneumonia was feared. Deep down under the sterno-cleido-mastoid muscle fluctuation could, with difficulty, be made out. Accordingly, under ether anæsthesia, a careful dissection was made. The incision extended from the mastoid process along the border of the sterno-cleido-mastoid muscle, about half its length, to a point on a line with the level of the thyroid cartilage. The external jugular vein was crossed, not divided, but held back out of harm's way with the retractor. The upper border of the platysma-myoides was cut through where it overlies the sterno-cleido-mastoid. The infra-maxillary branch of the cervico-facial nerve being exposed somewhat diagonally across the wound, it was retracted with a hook, and drawn out of the way. From that point the dissection was continued with the fingers and the handle of the scalpel. A large pus cavity was found just above the neighborhood of the digastric muscle. This was washed out and a drainage tube passed in at the lower end of the opening, and brought out at the upper opening, immediately behind the mastoid process. Free drainage was now well secured; and from this time on to the close of the case nothing eventful occurred. The daily reports were better, and at the end of six weeks more recovery was complete.

In this case good hearing was obtained in both ears, and the lady's health now, a year after her experience, is said to be perfect.

The accompanying illustration shows a catgut ligature in the site of the wound some weeks before the recovery was complete.

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A CASE OF PERICHONDritis OF THE THYROID CARTILAGE.*

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I shall report this evening one of a series of three interesting cases of perichondritis of the cartilages of the larynx, which have come under my observation. One case of this series, a perichondritis of the cricoid cartilage as a sequelæ to typhoid fever, I reported to you last winter.

The case which I shall report to-night is quite as interesting, and equally as unusual, as the case then reported.

On Wednesday, August 21, 1896, a young man of 24 years presented himself to me with the following history: One week previous to the above given date he felt, for the first time, a slight pain over his throat in the region of the thyroid cartilage. The next day this pain had become a little greater, and it was noticed that his voice was a little hoarse. He found that the partaking of food was also attended with some pain. Friday, Saturday, and Sunday these symptoms became progressively more pronounced. Monday he found the pain intense and constant; no pressure could be borne over the neck on account of the exquisite tenderness in the thyroid region. The ingestion of solid and liquid food was now almost impossible on account of the agonizing pain caused thereby. The voice had now become aphonic. He was under the care of a homœopathic physician for tonsilitis.

The condition remained about the same until I saw him Wednesday morning. Tuesday night another symptom was added to the above group, which naturally gave the patient just cause for alarm, and that was increasing difficulty of breathing. The general appearance of the patient was one of extreme anxiety. He had lost flesh rapidly during the week of illness. His temperature was 100 $\frac{2}{3}$ degrees. The neck over the thyroid and cricoid cartilage was extremely sensitive, although showing very little enlarge-

*Read before the Clinics and Pathological Society.

ment. The interior of the larynx showed marked change. The epiglottis was quite congested and swollen to nearly twice its normal thickness, while its free border showed quite an œdematous condition of the mucuous membrane. The left lateral wall of the larynx was so œdematous as nearly to fill out the super-chordal portion of the larynx. The right side of the larynx was deeply congested but free from œdematous infiltration. I readily recognized that I had to do with quite a serious form of internal and external perichondritis of the thyroid cartilage.

I could gain no history of injury. The young man's father died about two years ago of tuberculosis. Although I could gain no history of injury, it is quite possible that traumatism was the cause of this lesion, as the patient was in the habit of wearing a very high over-lapping collar, much affected by young men during the past summer.

I made deep incisions into the œdematous tissue over the epiglottis and lateral walls of the larynx, thereby evacuating some pus and blood. I advised him to use an ice-bag over the larynx, evacuated his bowels, and suggested the ingestion of as much liquid food as possible. Thursday the œdematous condition of the larynx had abated entirely. The pain was as great, and the swallowing more difficult. The temperature 101 degrees. External appearance the same. Friday morning Dr. Snyder saw the patient with me. All symptoms about the same, although the exterior of the neck showed considerable swelling. As we could not detect fluctuation, we decided it unwise yet to interfere. Saturday the patient's condition was decidedly worse. He had not ingested any food since Thursday, was unable to rest, and was becoming very weak. Could detect no fluctuation, but made a deep incision to the left of the thyroid cartilage without result. Sunday, swelling still greater, presenting quite a prominence in the middle of the neck just above the sternal notch. Could not detect fluctuation, but decided to operate on the morrow. Monday, with Dr. Snyder's assistance, I operated under cocaine anæsthesia. The neck was thoroughly cleansed. An incision was made in the middle line of the neck, as one would do in tracheotomy, about two inches long through the skin. Careful dissection was made along this line through the superficial fascia without meeting with pus. I thought it now wise to explore the bulging to

the left with a hypodermic syringe, and, therefore, plunged a needle into this mass through the bottom of the wound already made. The drawing of the piston home brought with it pus. Following up the track made by the hypodermic, which led down to the side of the left wing of the thyroid cartilage, we evacuated several ounces of offensive pus. The cavity was washed out with a warm boracic solution, a wet iodoform tent inserted and the wound dressed. On the two succeeding days, at the dressing, rapidly diminishing amounts of pus were evacuated, and on the third day, as the cavity seemed free of pus, the wound was allowed to close.

With the reduction of the swelling the patient regained his ability to ingest food, and rapidly gained in strength and flesh. His voice was very weak for several weeks, and then gradually and progressively became stronger and clearer; although even at the present writing it is far from normal and becomes easily fatigued. The left wing of the thyroid seems slightly shortened in its arteria-posterior diameter; and the prominence of the *pomum Adami* is much less pronounced than it was before his illness. The patient is now at his normal weight and usual physical condition.

Acute suppurative perichondritis of the cartilage of the larynx is rather an unusual condition to meet with. In my experience of over eleven years of practice it is the first case that has come under my observation. The cause of the perichondritis in this case is somewhat shrouded in obscurity. I was at first inclined to believe it to be tubercular in origin, and such may still be the case, but as the patient made so good a recovery, and as he has, up to the present time, shown no other manifestation of this disease, I am rather disinclined to believe this to be the ætiological factor. I should have made an examination of the pus for bacilli. The only other ætiological factor that could have had any influence would have been traumatism. Some injury might have been so slight as to escape the notice of the patient, yet sufficient to cause the inflammation that resulted in the perichondritis. Another important feature in the case is the small amount of deformity in proportion to the amount and extent of perichondrium involved. It is quite evident that both the internal and external perichondrium was affected to a considerable extent, but nevertheless there was but slight destruction of the cartilaginous framework.

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A NEW NEBULIZING DEVICE.

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In the use of inhalents, as a therapeutic measure in the treatment of nasal and lung troubles, the trend of present-day practice is toward the employment of nebulous vapors. By nebulization the remedy employed is at once dissipated in the passing stream of air, producing a veritable smoke, which, owing to its physical properties, penetrates further and, when inhaled under pressure, can be made to enter the finer ramifications of the air tubes of the lungs.

For the production of nebulæ there have been several devices offered for sale, and a few of them even patented. Of course, it will be understood the more claimed through the patent the higher the price. Certain advantages can be justly claimed for a multi-nebulizing apparatus, wherein several different remedies are in circuit, which can be combined at the will of the operator, not the least of which is that it is an imposing office fixture which may soon pay for itself through its psychical effect upon the susceptible patient. The advantage of being able to combine two or more remedies from different bottles, while being a great convenience, is somewhat overestimated and, as an offset, there may at times remain in the carrying tubes an objectionable amount of some previously used remedy. Furthermore, the numerous joints and connections required greatly increase the chances for leaks.

On the other hand, there are several advantages in having separate bottles, as, for example, portability and greater simplicity, which insures less trouble in cleaning and refilling. Another advantage of no slight importance, which may be mentioned, is relative cheapness. At my suggestion Messrs. Truax, Greene & Co. have produced a nebulizer of this latter class, which I will briefly describe:

The outlet hole is of sufficient size so the escaping stream of nebulous vapor is liberal in volume, and thus insures

sufficiently rapid action for either Politizerization or alveolar expansion. While the bottle is provided with a broadened base, to prevent

its being easily upset, the diameter of the body is small enough to permit of its being readily held with the cut-off in one hand, and thus leave the other hand disengaged. The metal-rimmed hard rubber cap screws upon the glass body, the thread being coarse, and the screw long enough so that to tighten it a full turn and a half is required. This permits of the use of a solid leather washer, and insures a tight joint and freedom from that constant leak and oozing which has

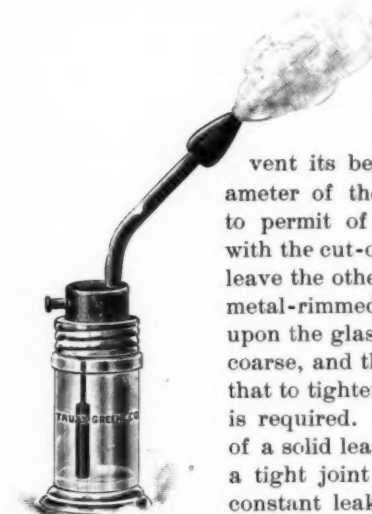


Fig. 1. Nebulizer, with
Nose-piece ($\frac{1}{3}$ size)

heretofore been so annoying in devices of this class. As the remedy being nebulized, comes in contact with only glass or hard rubber, there is no objection to the use of iodine, or any other agent which would be corrosive to metal. While this nebulizer may be used with a compression hand bulb the best results will be obtained when used with a compressed air apparatus, giving from a 20 to a 50-pound pressure, or more. The heavier the pressure, the more dense the nebula produced. With the nose piece (as shown in figure 1,) the nebulizer serves as a nasal inhaler, or as a device with which Politizerization can be accomplished. For lung inhalation the nose piece can be removed and the round tube held between the lips, which, when tightly compressed about the tube, form a safety-valve when practicing forced dilatation, as recommended by Dr. George F. Hawley.* I have found patients to differ



Fig. 2.
Mouth-piece
($\frac{2}{3}$ size)

greatly as to their ability in this direction, and to meet this difficulty have designed a mouth-piece which has proven to be much more agreeable and efficient in use, and still in no way impairs the desired "safety-valve" action.

*Jour. Am. Med. Ass'n, May 12, 1894, p. 702.

Figure 3 illustrates an extension tip of smaller caliber, which causes the escaping stream of nebula to be diminished in size, and consequently increased in force. This



Fig. 3. Extension Tip ($\frac{1}{3}$ size).

tip can be revolved at will so as to point downward for the larynx, upward for the post-nasal space, or to either side for the tonsils, and if thus used in lacunar tonsillitis will assist in dislodging the lacunar masses.

With this tip pointed sidewise, and slightly lengthened with a short piece of soft rubber tubing, the device can be conveniently used when inflating with the eustachian catheter, and thus force into the middle ear either a continuous or intermitting stream of nebulous vapor from the appropriate remedy, with a suitably regulated air pressure.

This nebulizer can be additionally used in several ways, as follows:

1. With a 20-pound pressure as an inhaler to medicate the nose, throat and larger lung tubes by introducing nose tip in one nostril and closing the other. Next operate cut-off and have patient inhale until the lungs are full, when discontinue air pressure. Exhale through nose and repeat, alternating from one side to the other. The deeper the inhalations the more pronounced the effects. By inhaling in this way no middle ear inflation will be produced.

2. If used in the same way, with intermitting pressure, after the free use of a suitably medicated lavoline spray, the oily fluid will be forced to the deeper nasal recesses, and may thus be of increased value during coryzic congestion, or when the accessory sinuses are affected.

3. To medicate only the fauces and nose, remove the nasal tip and, after filling the lungs with air, introduce tube between lips; next, operate cut-off, and at the same time direct patient to exhale through the nose.

4. To medicate the nose only, introduce nasal tip in one nostril, leaving the opposite nostril free; next, have patient open mouth and close soft palate against pharynx by breathing through mouth; then operate cut-off, when the nebula will pass through the nose in a continuous stream, as does a nasal douche. After a little, change tip to the other nostril, thereby reversing the direction of the nebula.

5. With many patients when thus used, with from a 20 to a 50-pound pressure, if the free nostril be quickly closed for a second, repeating several times in a minute, the ears will as often be inflated.

6. To give a pronounced Politzerization introduce nose-tip in one nostril, closing the other, and direct the patient to cough hard or hawk, simultaneously operating the cut-off. Either ear can be inflated at will by tightly closing the external opening of the other ear, otherwise both ears will be inflated, though with some patients as much as a 50-pound pressure may be required.

7. If, prior to this method of use, the nasal passages be freely sprayed with a bland oily spray, as a 3 per cent. solution of camphor-menthol in fluid lavoline, some of the oily fluid will be forced through the eustachian tubes to the middle ear and prove beneficial, if done at proper intervals, in chronic non-suppurative middle ear troubles. Of course no aqueous spray must have been previously used.

8. Another method of causing inflations is as follows: After exhalation introduce nasal tip in one nostril, closing the other; then direct patient to press tongue firmly against the roof of the mouth, well back, and make an effort to swallow each time the cut-off is operated, which should be done every two seconds until the lungs are filled, and successive inflations will thus be produced.

9. As an inhaler, to cause forced dilatation or alveolar expansion, after a full exhalation place mouth-piece between teeth, closing lips tightly and also the nose, then operate cut-off, directing patient to inhale as much as possible. A 50-pound pressure should be used and the stream of nebula continued until the lungs become so fully impacted that the nebula escapes explosively from the lips. In this way all the practical advantages of the pneumatic cabinet can be readily obtained and even more.

Columbus Memorial Building.

DISEASES OF THE GLOSSO-EPIGLOTTIC SPACES.*

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I have felt justified in reading a paper before this association on the diseases of the glosso-epiglottic spaces for the following reasons:

1. The subject being comparatively new, little is said of it in text books; and medical journals have had fewer articles concerning this locality than about others of less importance. 2. I have seen a large number of patients who have received treatment for catarrhal conditions at the hands of specialists of experience, and who have been skillfully treated in a way, for every pathological condition from the alai nasi to the cricoid cartilage, excepting the spaces between the tongue and epiglottis. However, these patients considered themselves uncured, complaining of many or all the symptoms enumerated in the body of this paper. 3. The frequency of diseases of the spaces, and the importance of its recognition and appropriate treatment.

The pathological conditions found in this fossa are, I should say, giving them somewhat in the order of their frequency, hypertrophied lingual tonsil, varicose veins, papilloma, fibro-sarcoma and carcinoma. Syphilitic and tubercular ulcerations are found here, but it was scarcely the purpose to include them in this paper. The space, particularly when occupied by a growth of any kind, is quite subject to acute and chronic inflammatory conditions. Enlargement of the lingual tonsil, varying in degree from that barely perceptible to masses projecting over and partially concealing the epiglottis, existed in about 20 per cent. of all the cases I have examined with reference to

*Read before the Western Ophthalmological, Otological and Rhinological Association. St. Louis, April, 1897.

the matter. Varicose veins were found in about 1 percent. of consecutive throat cases, without reference to age. Limiting cases to those past middle life the per cent. is higher. The diseases are more common in females than in males.

I have seen two cases of papilloma; one in a very nervous woman, aged 31, the other in a gentleman, aged 35, a man of great muscular development and perfect health, except the distressing cough to which the papilloma gave rise. His integumentary surface bore two score of warts and moles. In this case the papillomata of the glosso-epiglottic space were multiple, the size of a ripe currant, and two were pedunculated. Their surface was studded with horny epithelial spines after the type of the "seed" wart. I have seen one case of fibro-sarcoma which was secondary. A general surgeon had a few months before removed several lymphatic masses from about the body of the jaw, after which the faucial and lingual tonsils began immediately to enlarge, the former crowding the soft palate far upward, and later extending into the isthmus beyond the median line. The lingual tonsil projected upward against the faucial tonsil and backward over the epiglottis, giving rise to great difficulty of deglutition and respiration. It could be easily seen in this situation when the mouth was open. It weighed more than an ounce after removal. (Reported to Marion County Medical Society.)

As to symptoms, a considerable number of patients under my care for other ailments have been observed to have greatly enlarged lingual tonsils without any complaint whatever, and it has not been uncommon to find hypertrophies in these spaces large enough to impinge upon or even overhang the epiglottis, with the patient disclaiming all knowledge of discomfort about the throat. Others, with much smaller and comparatively insignificant growths, complained of many or all the symptoms here enumerated.

I account for this in two ways, viz.:

1. In persons of highly sensitive nervous systems the slightest touch of a foreign body against the hypersensitive epiglottis will excite the reflex centers of the air tract in a way that would not be possible in one whose nervous tone is normal.
2. The conformation of the epiglottis is such that, in many

cases, instead of standing up and away from the base of the tongue, as it normally should, it curls forward, projecting its crest directly against the tongue and over the glosso-epiglottic space, thus unduly impinging upon the smallest nodule of lymphoid tissue, and giving rise to symptoms equal in severity to those found in cases where the space is filled with tumors many times larger, but with normal epiglottitis.

A feeling of irritation, fullness and disposition to clear something from the throat is a very constant symptom. Cough, varying in degree from an occasional dry hack to the most distressing and frequent paroxysms, is common. Such coughing sometimes ruptures one or more of the venous radicals of the space, which are often varicose, particularly in patients past middle life. In this way there results a smart hæmorrhage, which, as a matter of course, greatly alarms the patient and may prove perplexing to the attending physician if he be not skilled in the use of the laryngoscope.

I have seen many who coughed but little, and felt but slight annoyance except at the time of taking food, when there would be such violent paroxysms of cough as to necessitate the patient's leaving the table. Vomiting is not infrequent. I have also seen a few of another class in which the tumor projected so much over the epiglottis that during the second stage of deglutition, when the tongue is normally carried far backward over the larynx, the growth being projected still further backward would partly fill the pharynx, and thus mechanically obstruct the act of swallowing, the patient complaining that the throat felt as if it had "partly grown up."

Functional heart disease is often much aggravated, and I believe sometimes wholly due to growths in this space. Globus hystericus has accompanied these heart cases, together with other symptoms commonly called hysterical. I believe some of these cases are cured by proper attention to the upper air tract and the space under consideration.

Other symptoms are sore throat, the nature of which can only be determined by laryngoscopic examination, when there may be found to exist all the varieties of tonsillar affections which are better known in connection with the diseases of the faucial tonsil. For example, acute lingual tonsillitis, acute follicular lingual tonsillitis, etc. While I know of no reported case of such, it seems reasonable that diphtheria may attack the lymphoid tissue here as readily as the same tissue above. Voice weariness and scratchy sensations are spoken of, along with the above symptoms.

Treatment—Many cases are nervous or anæmic, and a con-

siderable per cent. of the female patients have menstrual disorders. The peculiar nervous state at the meno-pause, together with the increased tendency toward varicose veins at the base of the tongue at that time, causes suffering at this period from conditions that had before been unnoticed. Such conditions require constitutional treatment appropriate to each case.

Extirpation of any growth present should usually be advised. Surgeons differ as to methods of removal, some preferring excision, some the cold snare or the galvano-cautery, while a few believe caustic and iodine compounds quite sufficient. I always use the snare when the growth projects sufficiently to be readily engaged by the wire loop. When the tumors are flat or small I know of no better instrument for their removal than the Myles lingual tonsillotome. Patients complain of much less pain, and there is very much less inflammatory reaction and general distress when the snare or tonsillotome has been used. The cure is also more rapid. I use the electro-cautery on varicose veins, on very small hypertrophies that are difficult to engage in the snare or tonsillotome, and for other reasons which rarely arise. The cautery gives rise to but little pain at the time, the part being thoroughly cocainized, but the after pain and distress usually arising from the inflammatory reaction set up in the loose tissue of the space has been, in my hands, a source of such great annoyance that I now resort to this method only in selected cases.

When electricity has, for any reason, been used, I have had the least trouble when I employed a blade or needle pointed electrode which could be plunged into the center of a growth, and the destruction be accomplished from within outward. As a matter of course, great care should be exercised not to use the cautery too freely, one or two nodules only being punctured at a sitting, and the greatest care exercised in avoiding injury to neighboring healthy tissues.

I have never used chromic or other acids as destructive agents in this region, knowing the difficulty with which the space is rendered sufficiently dry to prevent spreading and injury to healthy tissues. With one exception I have abandoned the use of the various iodine compounds and other so-called sorbefacients, their action, if at all beneficial, being so slow that patients either cease their visits or ask to be relieved by the more rapid methods of removal or destruction. The exception referred to is the iodine and carbolic acid compound recommended by Chapell. This preparation has the decided merit of sticking to the spot to which it is applied, and not spreading to adjoining healthy tissues. Its application is about as painful as the more radical methods, and requires so much greater time to accomplish its purpose that one is only justified in using it where patients are prejudiced against "operations."

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ADENOID VEGETATIONS.*

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Perhaps no one subject has received more attention at the hands of the rhino-laryngologist within the last few years than hypertrophy of the pharyngeal tonsil, or as they are commonly called adenoid vegetations. Although according to literary researches, hypertrophies of the pharyngeal space have been known to exist since the time of William Hunter, it was left for that accomplished specialist, Meyer of Copenhagen, to demonstrate the frequency, and clinical importance of these hypertrophies of Luschkas tonsil. There are several reasons why such an interest should be manifested, but there are three principle ones, the three that exist in connection with many other pathological conditions, which go to make the study of them interesting and our efforts for their relief fascinating and satisfactory. They are, *i. e.*, first, the common occurrence of the condition; second, the great extent of the pathological influence exerted by it; and third, the realization of the fact that there exists a plan of relief, which, if followed out, is bound to be productive of good results. Before passing to a consideration of the subject proper, I would state that it is not my intention to dwell at length upon the measures adopted for the cure of such conditions, although as previously stated, they are well nigh perfect, and a complete resume would be interesting, but I would rather call your attention to the etiology, pathology, and complications accompanying or resulting from this now easily recognized and important pathological condition.

Etiology.

Sajous says: "That the origin is probably traceable in all cases to a catarrhal state of the naso-pharynx, the

*Read before the second annual meeting of the Western Ophthalmological, Otological, Laryngological and Rhinological Association, St. Louis, Mo., April, 1897.

cause of the latter being, therefore, the primary etiological factors." He does not state what these primary etiological factors are, but the reader is left to infer, that they are the ones usually catalogued. Repeated attacks of acute posterior nasal pharyngitis, occurring independently or simultaneously with acute inflammatory affections of the anterior nasal cavities, the exanthemata and a diathesis. From an embryological standpoint, the rhino-pharyngeal tonsil is the earliest to appear, the palatal next and the lingual the last of all. In like order do these undergo atrophy, but sometimes they persist later than the time



Section of Adenoid Growth (under low power), light positive adenoid ground tissue; dark portions round and oval lymphoid follicles; on the right is shown a portion of outer border covered with columnar ciliated epithelium, which is detached in places; near the center is a large blood vessel filled with blood corpuscles; off from this above and to the left are smaller blood vessels.

specified, and then they interfere with the action of the nose, throat or ear. Their persistence or refusal to atrophy being brought about undoubtedly by the disturbances previously mentioned as all leucocyte manufacturing organs, which are most developed and active during

the period of growth, are more liable to hypertrophy on even slight irritation during the early years of life. Hill advances the theory "that the adenoid over-growth is due to the prevention of the normal tonsillar function of leucocyte migration, by diapedesis into the pharynx, by reason of the thickening and impermeability of the mucous covering of the tonsil, induced by contact with irritating contaminations of the nasal secretions." Whether we care to accept this theory or not, a microscopical examination of these over-growths go to prove that they are not neoplasms, but merely hypertrophies from the mucous aspect of the glands.

Microscopical Appearances.

They are composed of lymphoid follicles embedded circumferentially in the retiform adenoid tissue of His, and are bounded apically and laterally by columnar ciliated epithelium, cilia, however, are often absent at points of frequent contact or of friction with the soft palate. The only respect in which these vegetations differ from an enlarged tonsil is that in the latter there is a great amount of connective tissue, due to the irritation produced by the passage of food, etc., whereas the vegetations from their situation are protected from these injurious influences. Adenoid vegetations of adults contain a considerable quantity of fibrous tissue, having undergone fibrous change.

Symptoms.

The symptoms are such as we would naturally expect from a filling up, more or less, completely of the nasopharynx. Mouth breathing with all its attendant evil results. We have respiration, voice production, and articulation interfered with, and aside from these important disturbances we have a greater evil accompanying them, and one which is attracting the attention of investigators; namely, their effect on the function of cerebration. Those who have studied the condition are agreed that the obstruction to respiration, or other mechanical effects of these growths, are utterly inadequate to account for the tremendous disturbances of nutrition, both bodily and mentally associated with them, and relieved by their removal. Recently Dr. Harrison Allen has called attention particularly to a form of mental impairment and defective intelligence simulating idiocy, which accompanies even a

moderate increase of adenoid tissue in the region alluded to, and advances this hypothesis explanatory of the etiology. He points out the histological resemblance between the lower portion of the pituitary body and the pharyngeal tonsil, both being glandular in character and shows anatomically a connection by means of a canal, which closes during fetal life by which the top of the pharynx communicated with the interior of the skull, so that these masses of glandular tissue must have originally formed a portion of the original pharynx. Piersol, in his description of the pituitary body, refers to the anterior lobe as the anterior oral and tells us that it is entirely distinct from the posterior lobe in structure and in development, since the anterior lobe is derived as a diverticulum from the primitive oral cavity, and as such, is lined with the oral ectoderm. Dr. Woods Hutchison, of Buffalo, recently in an able article on "Acromegaly and Giantism" says: "Not infrequently in early life a fibrous cord runs up through the body of the sphenoid, connecting the two glands, and it is not unreasonable to suppose that structures that were originally continuous may yet retain reflex sympathy with and influence each others condition." To say that such authorities as Dana and Osler have endorsed these statements only serves to increase their value. The results of this reflex, if such exists, are apparent to every neurologist. May it not be manifested in the backwardness and stupidity observed in the majority of children suffering from this condition? The child has great difficulty in keeping up with its classes in school and is looked upon as being dull, and as a result is held accountable for that which it cannot help. Harrison Allen even goes so far as to venture the opinion that there are many children in homes for the feeble minded and idiots throughout the land who are victims of this condition, and who possibly could be restored to usefulness and to their families by a comparatively trifling operation. Interference with audition may or may not complicate the case, much depends on the relation of the eustachian orifice to the vault of the pharynx. If the orifice be situated high up, a comparatively small amount of growth will block it, and cause auditory troubles, whereas if it be low down, there may be extensive vegetations without the eustachian tube being implicated. If this symptom does present itself, and statistics go to show that it does in the

majority of cases, it is the one, as we all know, that first attracts the attention of the parents, and the child is brought to us to be treated for deafness. It may be accompanied or not, as the case may be, with purulent discharge from the ear. At times the child has violent attacks of earache. There is one more symptom or complication that I wish to call your attention to before leaving this part of the subject, and that is the interference these hypertrophies exert in connection with the function of voice production, and articulation. The voice has a "dead" muffled sound, with a marked nasal twang, and inability to pronounce "m," "n," and "ng." Browne tells us "that in many cases of deafmutism these growths are found." Dr. G. Hudson McCuen reports a very striking case of defective speech, the patient was in fact almost dumb, it was very nearly impossible for him to pursue his studies at school or for his teacher to know what was going on in the child's mind, adenoids was diagnosed, an operation performed which resulted in the removal of a large mass of adenoid tissue from the vault of the pharynx, the child was taken into training by his mother under the doctor's direction with the result that in a short time he was able to read clearly and answer questions promptly and correctly. And it might be interesting to say here that Lennox Browne, of London, records two cases in which persistent recurrence of laryngeal neoplasms in children had been stopped after recognition and removal of adenoids. He is also responsible for the statement that these growths may be the cause for much infantile laryngitis to be followed in a certain proportion of cases by the development of neoplastic tissue.

Diagnosis and Prognosis.

The diagnosis as well as the prognosis of adenoids we have brought out incidently in our review of the symptoms and complications, and further than a mere mention of the two methods employed in the diagnosis we pass to the treatment. The two methods alluded to are, as you all know, posterior rhinoscopy and a digital examination of the naso-pharynx. For the reason that we have to deal with children in the majority of instances, the former method is impractical, and we have to resort to the latter as furnishing the only reliable way of ascertaining the existence and extent of the growths. In conducting this

examination it is well to always practice two things, first to protect the metacarpo-phalangeal joint and digit of the index finger by a guard, extemporized or otherwise, and second, practice strict asepsis, particularly if an operation is contemplated immediately following the examination. Scrub the finger thoroughly and have the nail clean before introducing it into the naso-pharynx.

Treatment.

In regard to the treatment, as previously stated, it is not my intention to give a complete resume of the methods employed, for each operator has his own favorite method and each one, undoubtedly, possesses its advantages. I will simply outline briefly the steps in the operation I make, and which has yielded me very satisfactory results,



with the hope that you will bring out any modifications or suggestions that you may see fit. That vexed question as to whether an anæsthetic should be given seems to have been about settled by the different authors, they having come to the conclusion that it is best in children to give one. First, because they are unmanageable to a greater or less extent without it, and a more thorough and satisfactory operation can, therefore, be performed when it is used. Second, the danger attending the giving of an anæsthetic in children is so slight, and complete anæsthesia is never required. In individuals above puberty so many things arise to modify the question that the operator should exercise his own judgment as to whether a complete removal under an anæsthetic, or repeated sittings is desirable. Again the position of the patient during the operation has provoked much discussion, some preferring the sitting, the same as for tonsillotomy, others the recumbent, the latter seems to me to be the most desirable, for as soon as the operation is completed the patient's head is hanging over the table and the blood is passing through the nose and mouth, thus avoiding all danger from its

running down the trachea. When the child is anæsthetized, and the mouth-gag inserted, preferably Denhard's, it is a question of a very few seconds to tear out the larger portion of the growth with the forceps, I use Gradle's or Casselberry's, the former, I noted, in a recent visit to the nose and throat department of the New York Eye and Ear Infirmary, is the one adopted and highly recommended by such men as Mayer and Asch and is used exclusively in all their adenectomies. After removing the larger portion of the growth with the forceps, I follow up with a thorough curetting, using Gottsteins antero-posterior curette. The after treatment is simple, some efficient and pleasant antiseptic should be used as a gargle and mouth-wash, and the patient kept on a liquid diet for a few days.

Conclusions.

In summing up, let me again repeat the statement made in the out-set, that the object of this paper is to impress upon you the importance of this condition by reference to some of its complications, for the fear that our familiarity with the methods adopted for its cure, together with their common occurrence will cause us to pass it by too lightly.

Therefore, in conclusion, allow me to sanction and urge the adoption of a measure suggested by Dr. Hanau W. Loeb, of St. Louis, in a recent article on this subject, *i. e.*, that the state should provide for the examination of all school children with a view of correcting this common affection, and the symptoms which it occasions, and I would add that the teachers in our public schools be taught to recognize this condition, and be instructed to report all cases of mouth-breathing children to a physician, or a board of physicians created for that purpose for examination.

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DISEASES OF THE LABYRINTH.

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The physiological study, and the microscopical examination of the last few years opened a number of views into what was considered the most secret functions of the human organism. The observations of the clinic and of the post-mortem table did their part, and the last one and a half or two decades have solved some of the most difficult problems. Great controversies and changes of opinion were unavoidable. Functions that were ascribed to central organs, normal as well as abnormal ones, were proved to be either entirely dependent upon or greatly influenced by the condition of the peripheral apparatus. Only within the last few years has it been proved that of all the patients afflicted with paranoia and hallucinations 44 per cent. are surely, and probably 23 per cent. more suffering from ear diseases. In acute diseases with hallucinations there are only 29 per cent with normal ears. What a brilliant outlook if a part or all of these afflicted people could be improved or cured by rational and timely treatment of the diseases of the ears!

Help seems to be approaching for another great body of unfortunates—the deaf-mutes. From microscopical and clinical observations Urbantschitsch and Bezold came to the conclusion that a great number of people who were born deaf or became deaf later in life, were not entirely unable to hear, but that most of them could hear what these investigators call “sound-islands,” and by education, exercise and perseverance could be brought to hear even an ordinary conversation. If this work is carried out, how many of the inhabitants of our insane and deaf-mute asylums will be given back to health and home, nobody can tell.

A very promising field for scientific work is, therefore, the diseases of the labyrinth. There is a group of clin-

ically well-defined abnormalities of the ear that have to be ascribed to the labyrinth, such as boiler makers' deafness, most cases of senile deafness, deafness from sun-stroke, syphilis, necrosis of the labyrinth, traumatism of the organ, and that caused by ossification of the big annulare, which connects the foot-plate of the stapes with the oval window. Of all these the latter is clinically and anatomically the best known, because it is the most frequent, and a number of good articles have been published by Politzer and Bezold. But even these authors admit that the discussion about it is not closed.

A paper in the *Archiv. für Ohrenheilkunde* by Prof. Politzer induces me to publish the following histories of three cases of traumatic disease of the labyrinth. I am sorry, or rather glad, not to be able to show you any histological specimen, because all three patients are living. The first one I never saw personally, but I have learned his history from Dr. H. T. Patrick, of Chicago, who examined him last June. It was a patient of 26 years, who three years previously was thrown from a horse. He was unconscious for several days, and after waking up was deaf and so dizzy that he could not keep lying in bed. Blood ran from his nose and ears. After some weeks the symptoms improved and now he is able to hear loud conversation, is not dizzy, and can stand with open and closed eyes on one or two feet without wavering. The electric reaction shows nothing special. The following occurrence brought him to the doctor. Last summer when swimming in about three or four feet of water he held his head under the water and immediately lost all sense of his position, did not know where his head was, what was below and above, and would have been drowned, although he was a good swimmer and the water low, if his desperate struggles had not brought his head above the surface. A companion stood near by and laughed at what he thought was the swimmer's antics. What is the explanation? The patient himself dates this accident back to his fall. Do we have to think of a fracture through both regions of the semi-circular canals? If the fracture would have involved the cochlea there would hardly be a chance of recovery of the hearing, as actually occurred. Anyhow I wish to put this case on record, since it may be of some value in the discussion of the question of the physiological worth of the different parts of the labyrinth, which is on the programme

for discussion at the next international congress in Moscow.

The second patient offers some interest from another point of view. He was a man of 45 years, whom I saw in the German Hospital of Chicago. In an attempt to commit suicide six weeks before he shot himself in the left ear, being left-handed, and because as he said the left ear had always annoyed him by constant ringing. Here is the history as I got it from the sisters and the intern. The patient was brought in bleeding from his ear and unconscious. He remained so for several weeks, and only had some few moments where he recovered consciousness. These moments, however, were times of hard work for the nurses, because the patient was excited, noisy, and tried to get out of bed. We shall meet the same series of symptoms at our third patient and I shall try to give an explanation. At first glance the patient was apparently well. Yet he staggered in walking, could only understand loud conversation and showed complete paralysis of the muscles of the left side of his face. In the external meatus of his left ear there was no scar nor wound, only a considerable quantity of pus. After syringing the ear the membrane was found absent and the middle ear filled with soft granulations. In the lower and anterior part, where the opening of the eustachian tube would be found, the bullet was seen. It was immovable, and filled the anterior third of the middle ear. Nothing of the ossicles or membrane could be detected. From the position of the bullet I conclude that the cochlea and the greater part of the vestibulum was demolished. The facial nerve was injured at its first angle, where it changes its direction to the horizontal, backward through the tympanic cavity. Externally from the bullet the annulus tympanicus could be seen. Although it must have been a small caliber pistol, because it did not injure the meatus and had not force enough to penetrate, since there is not room enough in the middle ear for the smallest size bullet, and since the bullet was immovably fixed the bony walls of the labyrinth must have been crushed. There was no doubt in my mind that it was just the bony mantle of the cochlea which was shattered. We have, therefore, in this patient a destruction of the cochlea with but little injury to the semi-circular canals. He will never regain any hearing, which is so much worse since the other ear also is so deaf that he only hears loud

shouting. It may be of surgical interest to add that the surgeon in charge searched repeatedly for the bullet with an electric bullet probe. After it was discovered he removed it through an incision behind the ear by chiseling down to the middle ear.

The third patient, G. St., a brewer by trade, 19 years old, I had a chance to watch very carefully from beginning to end. He was brought to the Alexian Brothers Hospital of Chicago entirely unconscious with a fracture of the right clavicle, and blood was running from his nose and right ear. He had fallen, October 6, 1896, about 16 feet and did not recover consciousness for fully two weeks. Occasionally, however, he became partially conscious and violently grabbed at his bed or chair and tried to get out of bed, so that it was necessary to have a nurse continually at his bedside. All his movements had not an offensive, or aggressive character, but defensive. He wanted to steady himself, and offered no resistance when quietly pressed down in bed. The differential diagnosis from delirium tremens was not very easy, though several things spoke against the latter; the knowledge that the boy was of sober habits and had been employed in the brewery only a short time. Usually he lay quiet, but at times he awoke and all his motions and talk expressed great fright. Later on he explained that the extreme dizziness and subjective noise were the reason why he acted that way. The whole room and the bed, he said, seemed to move with a terrible roaring noise in a verticle circle quicker and quicker till he lost consciousness again. Since a similar occurrence was noted in the second case, where it was called delirium tremens, I think it is important to differentiate between the excitement of the lucid intervals of a patient with a fracture of the labyrinth from a delirium with its aggressiveness and talk of black animals. Our patient only looked for help. The third and fourth day a little blood poured from his ear. The fourth day I washed it with a syringe. After this a grayish, soft mass as large as a pea was removed. It looked like brain substance, but it consisted of large flat cells intermixed with crystals and pus cells. For two weeks he improved, The discharge from the ear was sanguinolent pus. The 20th of October he began to talk, but swelling and tenderness over the mastoid with feverish temperature interfered. For four days we were ready to operate, to give the pus an outlet rather than

be retained in some of the mastoid cells, or follow the course of the fracture. The pulse was 48 and the temperature 96°, but the patient did not feel sick, and did not vomit, and we dreaded chiseling under the circumstances. Yet he got over it with ice and repeated syringing, which showed clots of blood mixed with pus and cholesteatomatous masses. After this he felt much easier, but the noise and dizziness would not let him get up on his feet. He had completely lost his hearing in this ear. As soon as he recovered full consciousness (20th of October) paralysis of the muscles of the right side of his face was noticed. Paralysis of the muscles of the pharynx made swallowing at the beginning very difficult. This latter disappeared but the facial paralysis still persists. November 18 at the examination a white line was discovered at the promontory which went from the lower posterior to the anterior upper part, crossing diagonally the whole median wall of the tympanic cavity. By lowering the speculum and looking inward and upward this line looked to be 2 m.m. broad. In direct horizontal light it was not more than 1 m.m. It looked somewhat thicker at both ends and was continued beyond the field of vision. Pus was noticed oozing from both ends of this line. The handle of the mallet was hidden upward and backward in the attic. After repeated careful examinations I came to the conclusion that this must be the line of fracture. The fracture, therefore, must have split the labyrinth. The vestibulum and the first convolution must have been injured, perhaps also the modiolus. The semi-circular canals, even if not directly fractured, must have suffered from the hemorrhage, and the callus probably filled the whole labyrinth, so that scarcely any part of this tender organ will ever resume its function. The disappearance of the symptoms cannot be explained on the theory that this organ recovered but we must suppose that it succumbed and that the organism adapted itself to the new state of affairs (See Rich-Ewald: Ueber die Beziehungen zwischen der excitablen Zone des Grosshirns und des Ohrlabrynth. *Berl. Kl. Woch.*, '96, No. 42).

The next question is, whence came the cholesteatomatous masses? If they had been primarily located in the external meatus, the blood would have washed them away. The mass did not have any impression of the meatus or drum membrane. It is more probable that they were loosened by the stream of blood from a part of the

attic or antrum, which is so much more plausible since the patient later admitted that he had a running ear during his childhood. It may be that the cholesteatoma cavity lowered the resistance of the temporal bone and made the fracture involve this, in indirect fractures unusual part.

Although the fracture communicated with a badly infected middle ear cavity it did not get infected itself.

A week after we had observed the fracture line the mallet was in place and the drum membrane was regenerated.

The final examination, December 2, showed that the ear was totally deaf for speech and whisper, high and low sounds, for air and bone conduction. The patient could stand on one or both feet with his eyes open or closed. The treatment was mostly expectative, but the patient was closely watched. The main principle was, not to do too much. Horizontal position and syringing, though rarely, with warm boric acid solution was all we did.

ABSTRACTS FROM CURRENT OTOLOGICAL, RHINO-
LOGICAL AND LARYNGOLOGICAL
LITERATURE.

I.—EAR.

A New Ear Forceps, Ear Syringe Tip, and Obturator and Ear Speculum.

AMBERG, EMIL.—(*Medical Record*, March 6, 1897.)

Fig. 1 shows an angular ear forceps with concavo-convex shanks and blades. The shanks are arranged so that



Fig. 1. Angular Ear Forceps, with Concavo-Convex Shanks and Blades.

the convex side of one of the shanks closes in the concave side of the other. The instrument is strong and light; furthermore, the shanks cannot slip one from another.

Fig. 2 illustrates a tip for an ear syringe with a crescent-shaped opening at the end. When introduced the tip touches slightly the wall of the meatus. It proves to be better than the common tip for syringing out cerumen, be-

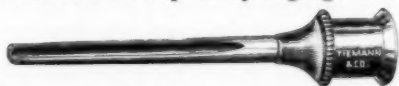


Fig. 2. Tip for Ear Syringe, with crescent-shaped opening at the end.

cause the stream of fluid is stronger than the stream produced with the old tip, and the fluid finds its way more readily behind the masses and returns more easily on the concave side of the tip.

Fig. 3 represents an ear speculum armed with an ob-



Fig. 3. Ear Speculum, with obturator.
turator, resembling somewhat a vaginal speculum. The

tip of the instrument is to be oiled before being introduced.

In cases in which the meatus is swollen, the introduction is less painful for the patient and easier for the physician than the introduction of an unarmed instrument. The instrument is made in different sizes. SCHEPPEGRELL.

Otitis Media Serosa.

AVRES, Cincinnati.—(*The Laryngoscope*, March, 1897.)

The paper includes a good description of the disease with four typical case-histories. The great benefit of paracentesis in properly selected cases is well brought out.

HARDIE.

Can You Cure Deafness Caused by "Catarrh"?—A Reply.

BARCLAY, St. Louis.—(*The Laryngoscope*, February, 1897.)

The writer concludes: "In all cases, therefore, of intractable deafness from chronic aural 'catarrh' where milder means have first been tried intelligently, but in vain, the drum-head should be opened and the tympanum explored with a view to determining the degree of mobility of the several parts of the transmitting mechanism, the location and character of the abnormal structural conditions that hinder its free movement, and the possibility, or rather the degree of probability, of restoring hearing by surgical operation on these parts. The details of such surgical procedure are of course peculiar to each individual case; and are only to be estimated and put into execution by one wholly familiar with the surgical anatomy and physiology of the ear, and thoroughly skilled in the technique of such deep and difficult aural surgery."

HARDIE.

Treatment of Adhesive Middle Ear Processes with Thyroidin.

BRÜHL.—(*Monatschr. f. Ohrenh.*, January, 1897.)

Vulpus reported good results with thyroid gland preparations in hyperplastic middle-ear processes, especially in those in which, through thickening, etc., real limitation of the movability of the ossicles existed.

Brühl employed tablets obtained from Burroughs, Wellcome & Co., of London.

In 18 patients, from 20 to 40 years of age, who remained under continuous treatment and observation, all offered the following symptom complex: Great hardness of hearing for the acoumeter, loud and whispered speech; dry external auditory canal in most; more or less negative condition of the Mt. (in 6 a hyperæmic condition of the promontory

wall was noted); Weber's test heard mostly in head; Rinne negative; B. C. increased; high tones mostly heard well, deep tones not heard; good tubal permeability; changes in naso-pharynx; no improvement after the use of the air douche; subjective noises in 13 cases. Duration of disease from 3 to 13 years.

Of 16 cases, 8 remained after treatment of from 6 to 8 weeks, subjectively and objectively unchanged. In the 8 cases remaining, 2, in spite of apparent improvement, stopped treatment after a short duration of observation. Of the 8 cases remaining for treatment, 2 showed a normal Mt.; 2 a hyperæmic promontorial wall showing through; 2 a thickened Mt., with an average duration of disease of three years. In 4 of these cases the result of treatment was satisfactory; in 2 very good—subjective improvement as well as distinct permanent improvement of hearing (from $\frac{1}{2}$ to 7 m. for loud speech, from 10—over 100 c.m. for the acoumeter).

During the time of treatment no other remedy was used; the hearing was tested once a week, so as to avoid as much as possible all sources of error. There was never apparent any alteration in the tuning-fork result.

Treatment was begun with 1 tablet daily, increased in 2 weeks up to 3; after 4 weeks a long pause was made, and then again the treatment was taken up.

He has seen no unpleasant symptoms, but the general condition, heart and kidneys must be kept under observation. Heart disease forms a contra-indication to the treatment.

The physiological symptoms of thyroid gland therapy are headache, violent pain in the limbs, polyuria, augmentation of the nitrogenous, phosphatic and chloride secretions, loss in weight.

Baumann recognized as the active principle in the thyroid glands an organic iodine combination, the thyroidine, and it is conceivable that the thyroid gland preparations influence the adhesions in the middle ear through the iodine present in them. Iodine acts as a superior resorbant for pathological, but not for organic, connective tissue, such as the remains of chronic inflammation.

It is noteworthy that, in middle ear diseases, the hyperostitic formations in acromegaly remain uninfluenced, but that, on the other hand, simple hyperplastic connective tissue formations, as those in parenchymatous struma,

especially in young patients and in uterine fibroma, were caused to retrogress.

The experiment of thyroid therapy is indicated only in those middle ear processes which are susceptible of retrogressive alterations; but that in the osseous new growths of the labyrinthine capsule, described by Politzer, one should only experiment in the very beginning while the labyrinth is as yet intact.

ALDERTON.

Excision of Membrana Tympani and Malleus for Attic Diseases.

BUTLER, London, Canada.—(*The Laryngoscope*, April, 1897.)

Scarlet fever, 9 years before. Perforation of the central portion of the membrana flaccida, blocked by granulation tissue; the membrana tensa was intact. The drum-head and malleus were removed under chloroform anæsthesia; the malleus showed a carious spot on the articular surface of its head; the incus could not be found. Hearing for the watch, which before the operation was on contact, was increased to six inches, and the occasional vertigo disappeared. Ten months after the operation a slight mucoid discharge persisted.

HARDIE.

A Case of Fracture of the Anterior-Inferior Wall of the External Auditory Canal Through Violence Applied to the Inferior Maxilla.

DENKER.—(*Arch. f. Ohrenh.*, Bd. 42, H. 1.)

A railway employe slipped while opening a railway gate in such fashion that the whole weight of the body was thrown against an iron bar projecting from the lower part of the gate. The force of the blow was received on the region of the left cheek and the inferior half of the left auricle; the force acting in a direction upward, backward and inward. Consciousness was not lost. Severe pain was soon felt in the region of the left cheek and auricle and tinnitus in the left ear; the painfulness soon abated but the tinnitus persisted.

Objective appearances: In the region of the left cheek slight swelling of the soft parts about 2 c.m. above the angle of the jaw and a slight subcutaneous extravasation over the inferior maxilla; moderate tenderness on pressure; fresh blood was seen on the floor of the external auditory canal; about the middle of the antero-inferior bony wall was a tumor, projecting into the canal in such a way that the manubrium seemed to rest upon it; the normal light-reflex was hidden by the tumor except at the umbo.

On moving the inferior maxillary articulation, the convexity of the tumor changed its position, subsiding about $1\frac{1}{2}$ m.m. on wide opening of the mouth, only to resume its former position when the mouth was closed. On the postero-superior canal wall opposite to the tumor were three points of blood extravasation, the remaining portions of the canal wall appearing unchanged.

Without doubt, from the history of the objective appearances, the condition was one of fracture of the anterior inferior canal wall, without involvement of the base of the skull. On the day of the accident, the movability of the fractured piece of bone was very apparent.

From the functional testing, it was apparent that the external auditory canal was the only part of the ear affected. The tinnitus disappeared after the removal of the blood that had collected in the canal.

The hemorrhage apparently took place from a rupture which occurred on the median side of the fractured piece of bone. The fracture is in the place in which, according to Bürkner, in children up to the 4th year and also frequently in later life a defect exists in ossification and where in adults not rarely the bone is very thin.

The treatment was expectant; canal cleared of blood and disinfected. The fractured piece of bone healed in about the position which it took when the mouth was closed.

Fracture of the bony external auditory canal is very rare—Bezold noticing only 2 cases in 20,000 aural cases.

ALDERTON.

Remarks Upon the Carotid Canal in Reference to Practical Otology.

GRUBER.—(*Monatschr. f. Ohrenh.*, January, 1897.)

The tympanum is surrounded by important structures: Superiorly and posteriorly, we find the Fallopian canal through which passes the facial nerve; in many temporals, the sigmoid sinus is separated from the tympanum by only a few millimeters; inferiorly the bulbus jugularis, the separating wall at times being absent; anteriorly the carotid canal, through which the internal carotid artery runs. That such an anatomical arrangement must receive consideration in practical otology is evident.

The anomalies existing in the formation of the carotid canal are not less important.

The carotid canal, in the normally formed temporal bone

of a new-born child, while already exhibiting its angular form, is, however, separated from the anterior section of the promontory. The same relation obtains in a well developed temporal bone of the adult; the promontory itself remaining with its whole lateral surface free.

The carotid canal, in such a case, does not infringe upon the tympanic cavity nor alter the form of the promontory. If one examined the Mt. the anterior limit of the promontory can be made out with exactness, because anterior and inferior to it, by reason of the greater distance of the inner tympanic wall from the membrane, this region appears darker.

But there exist very marked deviations from the normal, and these must be considered both from the diagnostic and the operative standpoint. If these deviations are overlooked, they may be provocative of very bad results.

Thus—

1. The bend that the carotid canal describes in the petrous portion, shows different degrees of curve; and, 2, it is not always in all places of the same width.

Especially posteriorly and externally, as also toward the tympanum, the canal is very often bowed out and widened.

This change in shape may be congenital or acquired through the activity of the vessels, thus producing a gradual thinning of the posterior bony wall of the canal, or even small holes. The more yielding portions of the posterior bony wall, especially that lying free in the tympanum, give way, and thus it occurs that the bony wall gradually projects into the tympanic cavity, producing interference with drainage and other untoward results. In some cases, the carotid canal almost covers the whole promontory.

Such a condition can perceptibly influence the picture of the normal Mt. and easily lead to a mistaken diagnosis. And in cases of retraction of the Mt. this projection outward of the inner tympanic wall favors the development of *synechiæ*.

Also the carotid canal being thus nearer to the cochlea, so it may happen in otherwise quite normal ears that pulsating or other aural sensations may be excited by the irritation of the ends of the cochlear nerves. Thus, in many cases, pulsating tinnitus may be controlled by pres-

sure on the carotid in the neck, only to return when the vessel is released.

In operation, really momentous results can ensue if this condition is overlooked. Simple paracentesis, if exercised in the anterior-inferior quadrant, might result in penetration of the wall of the canal with hemorrhage, only controllable with difficulty and by serious operation.

Similar anomalies are found, as is known, in the jugular fossa. Gruber mentions two cases of penetration attending paracentesis; one in Schwartze's clinic and one in his own.

In performing paracentesis in these dangerous regions come quickly to a stop immediately after penetrating the membrana tympani.

ALDERTON.

Reports of Over Sixteen Hundred Cases Tested with the Hartmann Series of Tuning-Forks.

HARRIS, New York.—(*Archives of Otology*, XXVI, No. 1.)

Hartmann's types are as follows:

Type I. Approximately equal reduction (for all forks) of duration of A. C. occurs as well in middle-ear affections as in labyrinth troubles. In the first instance good hearing by B. C. is found; in the second, poor hearing.

Type II. Poor hearing of the low, progressively better hearing of the high tones. By B. C., better hearing than A. C., particularly of the low tones. This condition is found in diseases of the middle ear, sclerotic manifestations, especially with ankylosis of the stapes in the oval window, and in conditions resulting from purulent inflammation of the middle ear.

Type III. Good hearing for low tones, increasing difficulty for the high ones. B. C. reduced, especially for the high forks. This form is found in boiler-makers, gunners, and in affections of the nerve apparatus. In acute middle-ear disease we find not rarely this type, which points to an involvement of the labyrinth by the inflammation.

Type IV. Irregular perception for the different tones, as well by A. C. as by B. C. Under this type are found different forms, poor hearing for the high and low tones with good hearing for the middle, or the middle tones can be perceived poorly and the high and low tones well. B. C. is sometimes increased for individual forks, sometimes diminished, or it can fail altogether. This irregular form of perception occurs in diseases of the nerve apparatus in varying proportion. Often it arises simultaneously with a disease of the conducting apparatus. Especially can a

positive diagnosis of labyrinthine disease be made, if certain tones are entirely lacking.

The cases were divided into: Impacted cerumen, 105; otitis externa circumscripta, 20; otitis media catarrhalis acuta, 35; otitis media suppurativa acuta, 37; acute inflammation of the attic, 10; otitis media subacuta, 41; otitis media suppurativa chronica, 222; otitis media suppurativa residuosa, 55; otitis media chronica sclerotica, 11; otitis media catarrhalis chronica, 428; otitis interna, 188; mixed cases, 276; presbycusis, 18.

Conclusions.—I. Normal hearing, as shown by watch, voice, and tuning-forks, is by no means as common as has been supposed. This failure is either apparent or real. It can with reason be affirmed that each person is a standard to himself and is not to be compared to some one else. A more rational explanation lies in the fact that in our climate catarrhal disease, the great cause of ear trouble, has insidiously exerted its effects on eustachian tube and middle-ear.

II. Acute affections of the sound-conducting apparatus, including obstructions to hearing by impacted cerumen, cause involvement of the entire musical scale by A. C. B. C. is likewise affected for the higher tones. This is suggestive that the labyrinth shares secondarily in the inflammation.

III. Chronic suppurative diseases of the middle-ear cause reduction in the entire scale for A. C., mostly for the low forks, least for the high forks. Hartmann's second law is, therefore, true to this extent; progressive degree of loss of hearing as the scale is descended is not true.

IV. Chronic catarrhal conditions of the middle-ear are similar to suppurative disease in their result on A. C., the low fork suffering always greatly more than the high fork. Hartmann's first law is accordingly shown to be incorrect.

V. Diseases of the internal ear show that the high fork suffers more than the low fork by A. C. Hartmann's third law is, therefore, correct to this extent.

VI. The result does not warrant the employment of the Hartmann scale for diagnosis. No progressive scale can be maintained. The low and high forks will give us all the information we desire.

VII. Rinne, except in cases of excessive poor hearing, is of doubtful value in diseases of the middle-ear, the results being often conflicting.

VIII. The series of tuning-forks is of value in prognosis to an extent not determined.

IX. There exists a large class of cases which conform to none of the regular types of disease, as revealed by the tuning-forks, and can only be regarded as falling under the head of mixed disease.

HARDIE.

Hyperostosis of the External Auditory Meatus.

HARTMANN, Berlin.—(*Archives of Otology*, XXVI., 1.)

Hartmann emphasizes the distinction between hyperostosis and exostosis. Hyperostosis always limits itself to the pars tympanica while the adjacent squamous portion has no protuberances. All of these structures are to be regarded as anomalies of formation, which begin with the development of the external meatus, and come to light with the advancing growth of the pars tympanica. Their frequency is 1 in 650 (9,630 patients). Hartmann has never seen traces of former suppuration. Their growth terminates with the growth of the individual. As proof that these are merely anomalies of development, and have nothing to do with inflammatory or morbid processes, the writer emphasizes: The absence of alterations referable to previous inflammation; the uniform condition of the bone which cannot be distinguished from neighboring bone (squamous portion); its limitation to the pars tympanica: the uniform occurrence on both sides; the stationary condition of the tumor in adults; and finally the very frequently observed hereditary influence.

HARDIE.

Keratosis Obturans—Epidermal Plugs in the External Auditory Canal.

HESSLER.—(*Arch. f. Ohrenh.*, Bd. 42, H. 1.)

This affection occurs principally in the first three decades of life. The sex was 38 times male; 29 female. The left ear was affected 24 times; the right, 22, and both 21.

We do not know of any direct cause. In looking over the histories of the cases, the presence of itching and scratching was remarkable, and it is believable that manipulation, long continued, was not without influence in the causation. The epithelium is pushed back and collects near the drum, and, through the local irritation of the canal walls, a chronic hyperæmia is brought about that produces, as a consequence of the hypersecretion, the ceruminous, and, as a consequence of the hyperplasia, the epidermal plug. Tickling sensations occur frequently in acute and subacute catarrh of the

eustachian tube, which latter is due to nasal and nasopharyngeal affections. In some cases there has been pre-existing chronic otorrhœa, without any immediate causative connection between the two diseases.

As long as the plug does not entirely fill the canal, there exist no symptoms. From the moment that the canal becomes completely obstructed there occurs a feeling of fullness in the ear; hardness of hearing; subjective auditory sensations, and slight or severe pain in the depths of the ear, just as occurs with cerumen.

Through prolonged growth of the plug there occurs a uniform pressure upon the Mt. and cartilaginous canal walls; the Mt. is pressed inward and union with the labyrinthian tympanic wall is brought about; the canal is uniformly widened so that one can see the whole Mt.

How far this process may go on without any further complicating inflammation in the canal we do not know. We find these patients applying for examination and treatment with deeper pathological alterations.

The different kinds of irritation produce inflammation, which is increased by the various bacteria existing in the canal and carried by them to the lymphatic glands—an infectious dermatitis is set up. This produces a still greater hyperplasia. Very often, in a few hours or at most in a day after this infection, occurs a regular rigor and a sudden swelling before and behind the ear; mastication is painful; tenderness to touch, and finally the canal is completely occluded by the swelling. Such a swelling from local infection occurs very suddenly and spreads widely around the ear, but does not result in formation of pus, and with rational treatment, with the ice-bag, disappears just as rapidly and completely as it appeared. With the subsidence of the inflammatory swelling there occurs an otorrhœa, but this does not give such relief to the subjective symptoms as in the case of an otitis media purulenta. Only when, in time, large pieces of the plug (thus making the diagnosis certain) are pushed out, does the pain diminish and the hearing improve.

Through pressure the Mt. may become atrophied in places or even perforated; in which latter case the epithelial masses press through in their further growth, as also does the pus with its micro-organisms, flowing from the canal into the tympanum and producing an otitis media purulenta. Of course, this occurs much more easily if

there has already existed a cicatrix or a dry perforation in the Mt., the result of a previous otitis media purulenta.

Hessler found perforation of the Mt. in 11 cases, nearly one-third of all. Adhesive inflammation between the Mt. and the inner tympanic wall was found in 15 cases. In direct connection with this existed the changes in position of the ossicular chain. Most frequently, great retraction of the manubrium; in one case, the incudo-malleal joint was dislocated inward; in one, the incus and stapedial crura were gone (and the jugular vein lay bare); in one, the incudo-stapedial joint was ankylosed, etc.

Where the epidermis is thrown off and excoriations exist granulations grow on canal wall and on Mt., that rapidly enlarge, become pedunculated and easily bleed. Such granulations were found in 19 cases; in any part of the canal, on the Mt. or at the fore edge of a perforation, or around the region of the short process.

With disappearance of the epithelial hyperplasia and the causative hyperæmia the granulations mostly waste away of themselves.

Because of the pressure, the osseous walls of the canal may be uniformly enlarged up to $\frac{1}{2} \times$ the normal; this atrophy from pressure being most marked where the bone is thinnest and spongy in structure. This condition exists in that portion of the posterior superior quadrant of the canal, which forms the partition wall between the external auditory canal and the aditus ad antrum. Hessler found bony defects in this region in 8 cases; in the floor of the canal in 7; in the roof of the canal in 4; in the roof of the tympanum in 3; in the roof of the mastoid in 1; in the internal mastoid wall in 1; and in the bone over the maxillary articulation thinned in 1 case. The pressure produces finally perforating absorption of the bony lamellæ; the more spongy portion being absorbed and the cavity being surrounded by the more compact layer of bone; the walls being smooth and not carious and the epithelial plug growing into the cavity and completely filling it. Should the plug extend in the direction of the cranial cavity, there is danger of secondary cranial complications.

The hearing is affected only according to the interference with the sound-conducting apparatus remaining after the removal of the plug.

Pressure on the facial nerve may produce facial paralysis. Pressure on the stapes may produce vertigo.

Treatment.—Remove by use of syringe, supplemented by the hook and forceps or pincettes where necessary. Recommends absolute alcohol to soften the concretion.

When the canal and surrounding soft parts are inflamed and swollen, delay attempts at removal until the swelling has been reduced by the use of the ice-bag.* This is sufficient in most cases if continued long enough; but if not, the use of Wilde's incision, leeching, etc., is indicated.

Hessler cautions against active treatment immediately after the removal of the plug, by syringing, etc., even if there exists a perforation in the Mt.

Throughout the article, Hessler insists on the essential difference between this condition and cholesteatoma.

[The reviewer cannot help believing that Hessler has in many of his cases mistaken the cause for the effect. It seems more rational to believe that where there is an existing otitis media, this is the cause and the epithelial plug the effect.]

ALDERTON.

A Case of Foreign Body in the Ear.

JERAULD, New York.—(*Medical Record*, January 9, 1897.)

It is rare for an adult to get a pebble in his ear and not know it. In the case reported a small pebble, which had been carried into the ear, while the patient was sea-bathing 2½ months previously, was removed. It had produced no discomfort other than deafness.

HARDIE.

Otitis Media Purulenta on the Left Side—Meningitis or Cerebral Abscess—Aphasia Operation—Death from Meningitis.

KUHN, Strassburg.—(*Archives of Otology*, XXVI., 1.)

The differential diagnosis between meningitis purulenta and cerebral abscess, following acute attacks of otitis media, is difficult, but focal symptoms, and especially the disturbances of speech, have long been considered as diagnostic of abscess in the left lobe. (Schmiegelow found aphasia in 23 out of 54 cases of left cerebral otitic abscess.) The symptom is, however, occasionally deceptive. A man was attacked with acute otitis media which disappeared under treatment. A month later myringitis and vertigo; paracentesis was twice performed. Two or three weeks later, following exposure, pain and vertigo reappeared, with high fever, 104, restlessness, partial unconsciousness, severe headache, and partial amnesia. Pressure on neck painful, percussion on left temple painful, occasional nystagmus, right facial slightly affected, general hyperæsthesia. The patient could not name certain objects,

but knew what they were; could not say "tumbler," but said: "There is nothing in it, but shall I try to drink?" Abscess was suspected, but puncture of the violently pulsating brain, exposed in the middle cerebral fossa, failed to find any pus. The autopsy showed the sac of the spinal dura mater filled with pus, and both the dura and pia much injected. The pia mater on the left side along the projection of the fossa of Sylvius was covered with a green purulent thick tissue. The left temporal lobe was softened but contained no purulent deposit. A small cavity, however, in the second temporal convolution was filled with blood. A small cavity in the tip of the temporal bone, and connected with the tympanum, contained a little reddish pus.

HARDIE.

Cholesteatoma of the Right Middle-Ear—Death During the Operation from Entrance of Air into the Injured Sigmoid Sinus.

KUHN, Strassburg.—(*Archives of Otology*, XXVI, 1.)

The patient was an anæmic girl of 15, with a tuberculous family history, but no previous suppuration of the ears. The tumor behind the right ear had opened spontaneously without pain. At the operation the fistula was larger than had been suspected and the mastoid autrum was seen to be filled with a white shiny tumor, which extended anteriorly into the tympanum, backward toward the posterior cranial fossa. Immediately upon the removal of the anterior portion of the tumor with a sharp spoon the patient stopped breathing and became cyanotic; all attempts at resuscitation were unavailing. Several of the symptoms pointed to death from chloroform, but the autopsy established the cause of death to be an ærial embolism in the right ventricle of the heart, arising originally from the sigmoid sinus. A condensed abstract of the autopsy findings is given in the paper. In his review of the literature Kuhn remarks upon the extreme rarity of such an occurrence in injuries of the cerebral sinuses. In order to avoid accidents of this sort Genzmer's suggestions are quoted. We should observe: 1. That the blood pressure is not too low. 2. That the patient does not make forced inspirations. 3. That the wall of the sinus is always shut off from the air by a mass of fluid.

If the accident has occurred, follow Senn's suggestion of puncturing the right ventricle.

HARDIE.

Subperiosteal Squamo-Mastoid Abscess.LACRONE.—(*Medical News*, January 16, 1897.)

Three cases, presenting no unusual features and terminating in recovery, are reported. HARDIE.

A Case of Bezold's Mastoiditis—Opening of the Abscess in the Side of the Neck—Resection of the Mastoid Process—Recovery.

LICHTWITZ, Bordeaux.—(*Archives of Otology*, XXVI, 1.)

The case history, although interesting, contains nothing unusual if one excepts the treatment previous to operation. The patient was advised to evacuate the abscess in the neck by pressure, while irrigation of the tympanum through the tube was undertaken by the aurist. In the writer's words: "It is impossible to recommend too warmly an operation in all similar cases"—and the earlier the better.

HARDIE.

Furunculosis of External Auditory Meatus Followed by Suppurative Otitis Media with Mastoid Operation.

LEDERMAN, New York.—(*The Laryngoscope*, April, 1897.)

The case, which had a satisfactory recovery, is reported because of the rarity of the complication. HARDIE.

The Relations of Affections of the Upper Air Passages to Diseases of the Ear.

MILBURY, Brooklyn.—(*The Laryngoscope*, February, 1897.)

The subject is treated in a general way. The ordinarily accepted positions of oto-rhinology are briefly stated, and five illustrative case-histories reported. (The abstractor is compelled to take exception to the statement that Hartmann "gives but scant attention to the nose and naso-pharynx.") HARDIE.

Aural Complications in Mumps with Reports of Eight Cases.MINOR.—(*New York Medical Journal*, March 27, 1897.)

Six of the cases were seen by Minor, and two occurred in the practice of H. D. Noyes, of New York. The left ear was affected in 5, the right in 1, and both in 2. In 10 cases out of 5,000 ear patients treated by Roosa, the left ear was affected in 6, the right in 3, both ears in 1 case. Minor divides his cases into four groups: 1. Those in which the trouble was confined to the middle ear—3 cases. 2. Those in which it began in the middle ear and extended to the inner ear—1 case. 3. Those in which it was limited to the inner ear—3 cases. In none of these was there involvement of the semi-circular canals. 4. Those in which it began in the inner ear, the semi-circular canals, and ex-

tended first to the middle ear and later to the cochlea—1 case. The reported histories are interesting, and suggest the advisability of prompt and intelligent treatment of the ear when it is affected in parotiditis. Minor considers its involvement unusual.

HARDIE.

Chronic Suppurative Otitis Media.

Moss, San Antonio, Texas.—(*Medical Record*, February 27, 1897.)

After insisting upon the importance of the disease the writer reports four cases of some interest. He believes that there are very few cases of long standing in which we are not justified in performing the Stacke operation, provided, of course, every visible cause has been removed, and the discharge still continues.

HARDIE.

Incomplete Exploration for Otitic Cerebellar Abscess—Death—Autopsy.

RANDALL, Philadelphia.—(*University Medical Magazine*, February, 1897.)

The patient, a boy aged 11, had suffered from severe earache, with suppuration, a recurrence of old trouble, and facial paralysis. In the hospital his condition at first improved, but he continued so weak that he fell when making his first attempt to walk. There was no loss of consciousness and the difficulty was considered syncopal. November 24, morning temperature, 95.4; pulse, 68. On the 28th he had persistent vomiting; temperature, 97; pulse, 45; pain severe throughout the head; later, occipital and nuchal pain. December 1, no pain; strabismus; limitation of outward rotation of right eye; choked disc, both eyes. The skull was trephined $1\frac{1}{2}$ inches above the external auditory meatus, and $\frac{1}{2}$ inch behind it. The brain bulged into the opening but offered no suggestion of abscess. A grooved director was pressed an inch directly inward, and then an inch and a half forward, upward, and downward, but no pus was found. The opening was enlarged upward and forward without result. The general condition immediately improving Randall was advised, on consultation during the operation, to wait before trephining the cerebellum. No notable changes in his mental or physical condition occurred for $3\frac{1}{2}$ days, when the patient died rather suddenly.

The autopsy showed a normal dura except over the right cerebellar region, where firm plastic adhesions existed, and over the tympanum where there was a small area of pachymeningitic granulations. The right lobe of the cer-

ebellum contained a spherical abscess the size of a hen's egg, with a well-marked capsule, and containing from one to two ounces of green fetid pus.

HARDIE.

Cerebellar Abscess Following Mastoid Disease—Death—Necropsy.

RIDLEY, St. John's, Woking.—(*The Lancet*, January 9, 1897.)

A boy, 14 years of age, had suffered from right otitis media purulenta following measles 7 years before. The pain began with a cold and cessation of the discharge. Temperature, 105°; pulse, 125; acute mastoid pain radiating from the neck and toward the frontal, parietal, and occipital regions; severe headache; anorexia; retching; insomnia; delirium at night. At no time was there photophobia, optic neuritis, inequality or sluggish action of the pupils or paralysis of any cranial nerve. A few days later a swelling appeared behind the ear, which was incised, giving exit to foul green pus. A probe was passed into the antral cavity and mastoid cells and linseed poultices applied(!). Very soon rigors began, followed by profuse sweating, diarrhoea, and vomiting. The rigors varied from 3 to 6 a day, and the temperature from 99° to 105°. Pulse, respiration, and cerebation were slow. On percussing the head, no pain except over an area in the right occipital region. On making the patient walk, staggering gait. Cerebellar abscess, confirmed at the autopsy, was diagnosed, but the patient was permitted to die without operation 6 or 7 weeks after the rigors began. The abscess occupied the anterior and outer portion of the right lobe of the cerebellum.

HARDIE.

Mastoid Suppuration Followed by Lateral Sinus Pyæmia, Treated by Partial Excision of the Sinus and Ligature of the Internal Jugular Vein in the Neck.

ROBSON, Leeds, England.—(*The Lancet*, February 6, 1897.)

The patient, a man of 37, had suffered from a discharge from the right ear since childhood. After pain, a temperature of 102° F. and bulging of the drumhead, a paracentesis was done. Twenty-four hours later, a severe rigor, temperature, 105° F.; pulse, 130; respiration, 22; this was followed by a second rigor in 6 hours, and a third 3 hours later. Operation on mastoid; pus; exposure of lateral sinus, which was bathed in pus, but as the blood in the sinus was fluid it was not interfered with. Eleven days later, a severe rigor, temperature, 105°; lateral sinus black and filled with septic clot. The sinus was laid open, the "septic" walls removed, and the sinus was washed out as

far as the torcular herophili, until blood flowed from the distal end of the sinus, which was then plugged with gauze. The internal jugular in the neck was ligated in two places, at an interval of half an inch. Recovery uneventful.

HARDIE.

A Case of Secondary Cholesteatoma of the Antrum and Mastoid Region-

SATTLER, Cincinnati.—(*Archives of Otolaryngology*, XXVI, 1.)

A girl, aged 17, had suffered from repeated attacks of acute otitis media since infancy. In the left ear hearing was almost totally destroyed, and a fetid odor could be detected, although no discharge had taken place from the ear for several months. The slight, almost constant, pain was felt over the entire left side of the head. Firm pressure over the mastoid caused pain, and at the same time a distinct yielding of the outer bony wall could be felt. At the operation a glistening structure was found underneath the very thin cortex. The cholesteatoma had hollowed out the region of the mastoid cells and antrum. Its thin capsule was intimately adherent to the bone, which was so thin, posteriorly and laterally, that pulsation of the dura was visible. The capsule contained numerous layers of white shrivelled and partially desiccated scales containing many bright cholesterine plates. Recovery was uneventful, and a permanent retro-auricular opening was maintained to anticipate recurrence of the growth.

HARDIE.

Periodical Rarefaction of Air in the External Auditory Canal.

SELIGMANN.—(*Monatsschr. f. Ohren.*, January, 1897.)

Periodical rarefaction of air in the external auditory canal, frequently repeated, is of value in palliating many kinds of annoying subjective aural sensations. The effect produced, it seems to Seligmann, is the more remarkable the more quickly the rarefactions follow each other.

(Seligmann's instrument appears to act in much the same way as Jackson's.)

The minimum number of rarefactions is about 120 to the minute. The quantity of air exhausted at each rarefaction can be regulated at the pleasure of the operator. The application always begins with exhaustion of the air in the canal, the membrana tympani being drawn simultaneously outward and then, by the reverse motion, inward, as by the application of Siegle's otoscope, and the movements can be watched through the otoscope.

Seligmann begins in cases of sclerosis and stapedial ankylosis with about 100 revolutions per minute.

In about 1—2 minutes most patients experience a very pleasant feeling in the ear. Especially is this the case in those cases in which Politzeration has been done without result or has increased the hardness of hearing. After about two minutes a short interruption in the treatment is allowed and then the number of revolutions is increased. The cycle is repeated 3—4 times, until from 800—1,000 revolutions per minute have been attained; higher than this Seligmann does not go.

In all cases of tinnitus, in which marked nerve deafness can be excluded, this symptom undergoes, as a rule, after such a sitting an instant cessation. Every patient declares that his tinnitus, whether strong or weak, high or deep, has disappeared. The further course varies. As a rule, those cases that come early for treatment often after a few applications have the tinnitus completely removed. But this happy result occurs in only a minority of cases of stapedial ankylosis. Most patients report at the next consultation that the tinnitus has returned, in typical cases after about ten minutes. It is not possible to prognosticate as to the time of recurrence; some cases in which the tinnitus quickly returns finally have it entirely disappeared, while others, in spite of a longer pause, have it persist. Periodical tinnitus is, in general, more kindly influenced than the continuous; but it is diminished in all cases.

Against this, in stapedial ankylosis, is to be put the failure of the treatment to affect any change in the disturbance of hearing. Even in sclerosis no permanent betterment, to any considerable extent, of the hearing distance has been met with at Seligmann's hands. Others have employed a suction pump of greater air capacity or of greater power, but Seligmann is inclined to think that after a certain amount of suction is exerted on the Mt. any further air suction produces structural strains and the probability is that usually air slips in along the side of the speculum, as this is never absolutely air-tight in its fit, and this accounts for the fact that extravasations are never met with in the use of the more powerful air pumps. To repeat, periodical rarefaction in the external auditory canal never has any effect on the hearing distance in these cases, but the aural sensations can be removed permanently or

temporarily. This procedure is often indicated in cases of adhesions in the tympanum.

Also in the results of acute and subacute suppuration, in which not only are the noises eventually favorably influenced but also the hearing ability. As to the time for beginning the treatment in these cases, Seligmann selects the moment when the tympanum becomes dry but is still reddened. Evidently the procedure must not elicit any painful sensations. If Politzeration gives no results then this treatment should be instituted. The hearing distance often increases even at the first sitting to about 20—30 c.m., but generally more slowly and very gradually. As a rule, the longer the time since the drying up of the suppuration, before the patient comes under observation, the more sittings will be required.

The interval between the sittings is a matter of choice, best two days.

The most favorable forms as to prognosis are the permanent dry perforations.

ALDERTON.

Contribution to the Treatment of Deaf-Mutism by Operation for Adenoid Vegetations.

SENDZIAK, Warsaw,—(*The Laryngoscope*, April 1897.)

Post-nasal growths are met with much more frequently in deaf-mutes than in healthy children. While the percentage in healthy children varies from 1 (Meyer), 5 per cent. of greater and 15 per cent. of lesser degree (Schmiegelow), to 9 per cent. (Kafermann), the figures for deaf-mutes are as follows; Lemcke, 50 per cent.; Wisblewski, 57.5; Piesson, more than 50; Frankenberger, 59.49; Aldrich, 73 per cent. Post-nasal growths observed in the deaf: Halbeis, 53 per cent.; Meyer, 74.8 per cent.; Hartmann, 74.18 per cent. Sendziak reports two cases in which the extirpation of adenoid growths in deaf-mutes resulted in restoration of the hearing. In one case, the patient, aged 5, was a congenital deaf-mute; had a deaf-mute brother, aged 20. The child's utterances were of a scarcely intelligible stuttering form, and he lacked completely the power of concentrating his attention. Soon after the operation the hearing improved, and the child began to pronounce first words, and later sentences; the intellectual development following the operation was remarkable. A second case is imperfectly reported. Sendziak insists upon the importance of the operation from a prophylactic standpoint.

HARDIE.

An Analysis of 114 Cases of Mastoid Involvement Complicating Acute Middle Ear Suppuration.

SHEPPARD, Brooklyn.—(*Medical News*, April 24, 1897.)

The common causes were: "Colds," 24; grippe, 21; sea bathing, 4; scarlatina, 3; no discoverable cause, 49.

Sex: Males, 65; females, 49.

Ages: Under 1 year, 8; 1-10, 13; 10-20, 12; 20-30, 27; 30-40, 25; 40-50, 11; 50-60, 11; 60-70, 5; over 70, 2.

Complications: 76 cases were uncomplicated; Bezold's variety, 3; mastoiditis, with secondary periostitis, 19. The other complications met with were: Suboccipital abscess, 1; furuncle of external meatus, 1; erysipelas, 3; diabetes, 3; diabetes, erysipelas, and meningitis, 1; meningitis, 2; meningitis and brain abscess, 1.

Results: Unknown, in 25; recovery without operation, 26; recovery (both ears affected) without operation, 8; operation followed by recovery, 4; operation (both ears) followed by recovery, 4; deaths, 5.

The more interesting case-histories are detailed.

HARDIE.

Report of a Case of Acute Purulent Otitis Media Complicated by Retro-Pharyngeal Abscess.

STILLMAN.—(*New York Med. Journal*, February 6, 1897.)

The patient, a man aged 40, developed an otitis April 18, for which paracentesis "under antiseptic precautions" was done, and considerable serum escaped. On the third day the discharge became purulent, and the ear was syringed every few hours with a solution of bicarbonate of soda, listerine, and water, a little boric acid insufflated, and iodoform gauze "placed lightly in the meatus." One week later, gentle Politzerization. The patient gradually became worse, and in the fifth week the hemicrania became very severe, the pain focussing at the left side of the vertex, and radiating toward the left temple. The head was rotated with difficulty, the patient locating the stiffness in the back of the neck. Trional, codein and quinine were freely used. A pulse of 46, for some days, suggested cerebral abscess. June 2, deglutition somewhat painful, and the left side of the throat, particularly at the junction of the faucial pillars, was swollen; lancing, but no pus discovered. June 8, temperature, 99.7°; pulse, 72. When Politzerization was done, one drachm of pus gushed from the external meatus, and the patient said it felt as if something broke in his head, and when pressure with the finger was made on the swelling on the left lateral wall of the pharynx pus

exuded from the ear. Attempts to evacuate the pharyngeal abscess with an aspirating needle were unsuccessful, but on the 10th of June the abscess wall was ruptured with the up-tip of an atomizer, and a profuse flow of pus took place. Later on in the case a tonsillar abscess developed, which was permitted to rupture spontaneously, after which it was freely laid open. "June 30. A hard swelling remains in neck at angle of jaw. It began to soften about the 4th or 5th of July and a poultice was ordered. By the 10th fluctuation could be felt, and on the 13th it was opened and gave exit to a couple of ounces of pus. After that the progress toward recovery was quite rapid." [One is tempted to point out the moral suggested by the history of this unique case.]

HARDIE.

Four Cases of Otitis Media Purulenta, with Extension Into the Skull and the Back of the Neck.

SWAIN. New Haven.—(*Archives of Otolaryngology*, XXVI, 1.)

Case 1.—*Epidural abscess in the middle cranial fossa.*—Operation was performed after the usual expectant treatment. No pus was found in the antrum, but on extending the opening upward toward the external swelling behind the ear pus was seen running out of the bone into the upper part of the wound. The sinus in the bone was followed upward and backward for three-quarters of an inch when it opened into a considerable cavity. The adjacent dura was healthy. Recovery was uneventful, the patient regaining the 15 pounds he had lost.

Case 2.—*Mastoid empyema and epidural abscess, breaking into the external ear canal.*—In this operation no large cavity corresponding to the antrum was discovered. The exposed lateral sinus was healthy. The pus which had broken through into the external canal was considered to have burrowed its way between the cartilage of the ear and the bony wall of the canal. It took this direction because of the poor development of the mastoid proper.

Case 3.—*Purulent collection in the lateral ventricle.*—A man, 40 years old, while going home from work became faint and fell, and gradually became semi-comatose. Two or three months before he had suffered from dizziness, and for the past six weeks from severe headaches, chiefly on his right vertex. In the hospital he would lie for hours in a semi-comatose state, eyes half-shut, pupils small but movable, picking at bed-clothes; he winced if the right side of the head was touched, but there was no point of spe-

cial tenderness. He objected, however, to the cleansing of the right ear which had been discharging for some years. No assistance could be gained as to localization of the troubles, from reflexes or fundi; there were no paralysis. Ice was applied to the shaven head, ergot, iodide and bromide were given, and for a short time there was improvement. Soon, however, matters changed for the worse; Cheyne-Stokes breathing, temperature 103° , involuntary defecation and urination. This lasted for one day, when he became better. The consultants in the case considered operation inadvisable, and beyond a "scraping out" of the middle ear nothing was done. Five days before his death the patient began to cough, and his breathing varied between 40 and 56. The temperature did not go above 101° until shortly before his death, when it reached 107° . The autopsy discovered no trace of the suspected basilar meningitis beyond one or two spots of slight cloudiness in the pia over the right petrous portion. The lateral ventricles were filled with serum, that in the right being slightly milky. The choroid plexus was disorganized, and had the characteristics of a pyogenic clot for from a half to three-quarters of an inch from the lower end. The cloudy spots on the pia corresponded with this area. The dura was slightly adherent over the roof of the tympanum, which was slightly discolored and friable. The middle ear was full of pus and granulation tissue.

Case 4.—*A Trapezius Abscess.*—The patient had had a chronic purulent otitis media for some years. He presented himself with a swelling above and behind the mastoid, with fluctuation one inch to the right of and below the occipital protuberance. This was incised, and a probe could be passed three inches in a downward direction. Four months later a similar swelling, and a third appearing five weeks later, a thorough operation was suggested. The antrum was full of pus and granulations, the lower end of the process was removed, and the posterior and inner wall of the tip of the mastoid showed a fistulous track, which could be followed downward behind the adjacent muscles and deep cervical fasciæ to the abscess cavity under the trapezius. Convalescence was slow. HARDIE.

A Case of Cerebral Abscess, Presenting Some Unusual Features.

WILLIS, Bristol.—(*British Medical Journal*, February 6, 1897.)

The patient, a girl 8 years old, had otitis media puru-

lenta, and on admission to the hospital presented symptoms of meningitis; headache, vomiting, high temperature, retraction of head and neck, "cerebral irritation." These subsided, and were followed by those of cerebral abscess; complete right-sided facial paralysis, greatly impaired power in the right arm and hand, deviation of the tongue, marked impairment of speech. A disc of bone one-half inch in diameter was removed with the trephine, the pin of the trephine being applied to a spot over the lower end of the fissure of Rolando on the left side. A trocar was passed slightly downward and backward into the brain substance, and on removing the trocar pus welled up through the cannula. The cannula was left *in situ*, the wound sewed up, a hole having been made in the flap to permit the passage of the cannula. On the second day the discharge of pus ceased, and as it was thought the tube had become blocked a little chloroform was given, and it was removed and reinserted in the same direction. On removing the trocar a stream of blood shot up a foot into the air. This was controlled by the finger being placed on the mouth of the cannula, but recurred on removal of the cannula. A similar thing occurred when the cannula was introduced in another direction. Nothing further was therefore attempted. The patient made a slow but uneventful recovery.

HARDIE.

II.—NOSE AND NASO-PHARYNX.

A Modification of Bosworth's Nasal and Aural Snare.

ANDERSON, P. L. Chicago.—(*Journal of the American Medical Association*, April 10, 1897.)

The modification made by Dr. Anderson consists in substituting a flexible steel stilette, with one end flattened and having a round eye large enough to receive a double thread of No. 5 piano wire; the other end terminates in a circular hook, the central point of which is in line with the long axis of the stilette. The stilette is inserted into the canula of Bosworth's snare, with the eye projecting just beyond the distal end, in position for threading with the short loop of wire. The other end is hooked around a screw-post set in the upper finger-ring of the sliding handle. This post is provided with a thumb-screw, which securely holds in place the hook, allowing the stilette to slide either forward or backward.

SCHEPPEGRELL.

Treatment of Chronic Sinusitis Frontalis and of the Secondary Intracranial Lesions.

BOTEY, Barcelona.—First Spanish Con. of Otol., Rhin. and Laryn. Section on Otol. and Rhin. (*Journal of Laryn., Rhin. and Otol.*, February, 1897.)

In the first case of sinusitis frontalis reported free drainage was established into the middle meatus. In the second case there was a subacute osteomyelitis of the frontal sinuses and of the frontal bone, with perforation of the posterior wall of the left sinus, meningo-cerebral infection, subdural and cerebral abscess, and fungosity of the meninges; a set of lesions demanding an operation, which included trephining of the frontal sinus, removal of granulations and intra-cerebral puncture, which gave issue to pus. Finally, a cerebral hernia was developed, and after partial removal of this, meningo-encephalitis set in with fatal termination.

In the third case there was retention of pus, grave cerebral symptoms, and after opening the frontal sinus a perforation in its posterior superior wall was found. This opening was enlarged on detecting granulations of the dura mater with subdural abscess. The granulations were removed and the abscess drained, and, at the same time, an exploratory cerebral puncture was made with negative results. A passage into the middle meatus was established to afford suitable drainage, and finally, by the employment of Koenig's osteo-periosteocutaneous method, a permanent cure was obtained.

As the result of his experience, Dr. Botey makes the following statements:

1. In frontal sinusitis with retention of pus, one must trephine from the front without delay.
2. The external operation wound can heal by first intention if an opening of sufficient size has been made into the middle meatus.
3. If symptoms cause a suspicion of meningo-encephalic complications, one should trephine the posterior wall of the sinus, and undertake suitable intracranial treatment without fear of injuring the brain.

SCHEPPEGRELL.

Ulceration of the Nasal Septum.

CHRISTY, T. C., Pittsburg, Pa.—(*New York Medical Journal*, February 2, 1897.)

An analysis of the cases reported furnishes the following results:

1. Four in married women at between 30 and 40 years of age.
2. In the majority of cases the lesion had its origin on the septum, and was communicated to the adjacent soft parts by contact with the swollen tissues.
3. The evidence of the specific infection was positive in one instance only.
4. In one case there was inflammation of the septal cartilage, with necrosis of the alveoli of the central incisors, resulting in a sinus communicating with both nares.
5. No appearances outside of the nares, except in one case; acute inflammation of the larynx, with threatening periostitis of the hard palate.
6. In no case was there destruction of the hard palate, as so frequently occurs when the septum nasi is involved.
7. Marked mental and physical depression, with lowered vitality in two cases, in which the constitutional remedies even in small doses were indifferently tolerated.
8. Galvano-cautery not an available agent in lesions of this variety.

The object of the communication is to show the vulnerability of the septum nasi to the pernicious influence of acute and chronic infectious diseases; and, further, in a lesser degree, that of operations of the delicate epithelium on the septum in the young who are feebly nourished; the abrasions and erosions present on the septum in those of advanced years due to atrophy and exsiccation of the membrane; and, finally, the effect of the dry and rarefied atmosphere of the higher altitudes on the septal mucous membrane.

SCHEPHEGRELL.

Surgical Therapeutics in Rhinology.

COMPAIRED.—(*El Siglo Medico*, January 3, 1897.)

Surgical therapeutics in rhinology has been reviewed by Dr. C. Compaired in *El Siglo Medico* (Madrid), No. 2245, January, 1897. Rhinology is the youngest specialty, born (a posteriori) of otology and laryngology, and has grown greatly by the application of surgery, and because of the futility of much resort to drugs. He ascribes the good results of surgery to the mucous membrane's secretion, since drugs are often resented where the knife is tolerated, because the saliva and nasal mucus secretion seem to be very antiseptic.

Nasal stenoses lead to all kinds of catarrh, which no drug can help. Inspiration and filtration are the two func-

tions of the nose, both of which, in this case, can be restored only by operation.

Dr. Compaired, continuing this subject (*El Siglo Medico*, Madrid, January 10, 1897), illustrates his proposition by a series of cases in which the nasal disease made no improvement after all the accepted methods of treatment had been tried, but which responded at once to surgical interference (such as the cautery, cutting for enlarged or deviated septum, etc.), restoring patients to health and materially shortening the length of treatment. HALE.

Turbinotomy and the Spokeshave.

EWING, FAYETTE C., St. Louis.—(*The Laryngoscope*, March, 1897.)

The use of the spokeshave by Mr. Carmalt Jones is an illustration of the fact that zeal may be carried beyond reason.

In the cases reported by Dr. Abercrombie with this method (*The Laryngoscope*, January, 1897,) the results appeared to be unusually good, but we are not informed as to the permanent result or benefit in the cases reported. The fact that Dr. Abercrombie admits moderate hypertrophic rhinitis was sufficient to induce the operation, is conclusive proof that it has been carried to an extreme. Turbinotomy for rhinitis is brutal; upon children it should be classed as malpractice. The rhinologist who achieves the best results will use his efforts to restoring, as nearly as possible, the relationship of the parts. The object of the spokeshave is to remove a part of the nostril, which has an important physiological function. The entire removal of a turbinal may be necessary in certain very rare conditions, but even in this, partial ablation will generally serve the purpose.

[The criticisms of Dr. Ewing on turbinotomy are in accordance with the views of the reporter, as stated in the discussion of this subject before the Southern Section of the American L., R. and O. Society. The cases required for turbinotomy are of great rarity, and when we see that operators may individually report as many as 36 and 100 cases each, it is the most conclusive proof that this operation has been carried to the most unnecessary extreme.—SCHEPPEGRELL.]

The Relation of Certain Nasal Conditions to the Pain During Menstruation and Parturition.

FLIESS.—(*Berl. Klin. Woch.*, No. 9, p. 192, March 1, 1897.)

At the meeting of the Berlin Obstetrical and Gyneco-

logical Society, held December 11, 1896, Dr. Fliess made some most remarkable statements, which are here reported in the only too brief form in which they are accessible. The large majority of cases of dysmenorrhea in which the pain persists after the onset of the uterine flow depends on the nose. This need not excite surprise, as the nose is subject to regular changes during menstruation; swelling, increased sensitiveness to probing, tendency to bleeding, cyanotic color. These changes occur more especially on the lower turbinals and the tubercula septi, which are for that reason the "genital spots," par excellence of the nose. The nasal form of dysmenorrhea depends on their pathological conditions. This is the case (1) because, on cocainizing these spots, the dysmenorrhic attack is stopped during the action of the drug; (2) because, on cauterizing these spots, the return of the dysmenorrhea is hindered permanently or for a long time. They become pathological either through infectious diseases, which also affect the nose (scarlatina, diphtheria, influenza), or because, in the first years following puberty, the nasal congestion which appears most regularly at the menstrual periods did not find its normal relief through the proper establishment of the uterine flow. This occurrence is repeated during pregnancy, when the process of menstruation does not cease, but continues to produce the periodical changes in the nose. All the periodical stimuli are added together during pregnancy, and finally lead to the great menstruation, *i. e.*, parturition. This last has all the characteristics of menstruation, including typical nasal ones. It may, therefore, be accompanied by nasal dysmenorrhea in its exaggerated form, the "genuine pain of labor." Genuine labor pain begins already in the first stage of labor, is not necessarily present in all women, radiates from the small of the back to the hypogastric region, and can—as common nasal dysmenorrhea—be stopped by the application of cocaine. It should not be confounded with the pains over the symphysis, assuredly not with sacral and vaginal pains, which are purely local and entirely independent of the nose. Dr. A. Martin inquired if this cocainization had any influence on the onset and energy of the uterine contractions. That being the case, pain might be alleviated at a time when chloroform is not generally favored, in the first stage. Dr. Olshausen understood the essayist's statement to be that cocainization influences, not the pain

caused by the pressure of the soft parts, but the real pain of labor. F. retorted that "genuine pain of labor" does not depend on the condition of the soft parts, but solely on the nose. That the first stage can be rendered painless by cocainization only when the genuine labor pain alone is the cause of distress, not when pain in the region of the sacrum or symphysis predominates. MORGENTHAU.

A Case of Sarcoma and Carcinoma of the Nose.

GREENE, MILTON, Grand Rapids, Mich.—(*Medical News*, February 6, 1897.)

A woman of 32 years had had a catarrhal condition of the nasal mucous membrane for years, accompanied by an offensiv discharge. During the previous eight months she had nasal stenosis, especially on the right side, together with pain and a slight discharge. Epistaxis was frequent. There were no external signs of the disease, but protruding between the middle and lower turbinated body there was a growth as large as "one-half of a small almond," which bled freely upon being touched. When this mass was seized with a pair of small forceps it broke down, and left a large bleeding base. Three months afterward the case had become aggravated and external signs were presenting, there being exophthalmus of the right eye. The mass was removed by means of an external operation, but the disease returned and she died a month later. SCHEPPEGRELL.

Perichondritis of the Nose.

KEISER, GOTTLIEB, Copenhagen.—(*The Laryngoscope*, March, 1897.)

Primary acute perichondritis is characterized by its sudden appearance in otherwise healthy individuals, where every etiological factor, such as syphilis, tuberculosis, trauma, etc., has been excluded; it is ushered in with a high fever, redness and swelling of the nose and adjacent tissues, and accompanied by a serous or purulent exudate from the involved areas.

From the limited number of cases which literature furnishes of this affection, it is evident that it is of very rare occurrence. It is not peculiar to the septum alone; it may also occur in the external ear and in the larynx.

The differentiation of purulent from serous perichondritis at the outset is impossible, as both forms begin with the same manner of phlegmonous symptoms; tumors are formed on both sides of the cartilage quadrangularis, frequently communicating by a necrosis or perforation of the

septum. Exploratory probing is the only definite method of determining the exact condition of things.

SCHEPPEGRELL.

Removal of the Anterior Extremity of the Inferior Turbinate as an Alternative of Turbinectomy.

LAKE, R.—(*Journal of Lar., Rhin. and Otol.*, April, 1897.)

Dr. Lake recommends this method as a more conservative treatment than turbinectomy. The anterior part of the turbinal may be removed by means of a strong pair of artery forceps, punch forceps, or scissors and snare, the writer preferring the latter.

SCHEPPEGRELL.

Direct Inspection and Treatment of the Pharyngeal Tonsil and Salpingo-Pharyngeal Fold.

LINDT, W. JR., Berne.—(*Fraenkel's Arch. f. Lar.*, VI, 1, p. 47, 1897.)

For this purpose L. has designed a new palate retractor, which seems to offer some distinct advantages over the various models so little used. It consists of a handle 11 c.m. long and 3 c.m. broad, to which is joined, at a little more than a right angle, a horizontal part, forming on the lower surface a longitudinal groove, narrowing gradually and ending in a hook. The latter is but $1\frac{1}{2}$ c.m. high, broadens on the up-turn from 9 to 14 m.m., and is notched at the upper margin. The retractor is to be used in the following manner: After painting (especially at the first trial, and sometimes at each time) the posterior wall of the pharynx and the anterior and posterior surfaces of the velum with 5 per cent cocaine solution, the instrument is gently introduced behind uvula and velum, the patient's head bent backward, and the soft palate drawn forward and upward as far as possible with gradual and firm, not jerky, traction. It is well to have the patient sit a little higher. Under favorable conditions it is possible to look directly into the recessus medius of the pharyngeal tonsil, along the groove on the lower surface of the instrument. In children in whom the tonsil is not too greatly enlarged, one can see the single divisions of the cushion, and separate them with a probe to inspect the furrows. To bring the right tubal cushion or ostium into view, one must bend the patient's head far back and to the right, draw the angle of the mouth backward and outward with the finger, and pull the soft palate upward and to the right with the retractor. When the palate is held correctly, the ball of the hand keeps the patient's head bent back, while with the right hand various instruments may be introduced in

the groove to the parts to be treated. With a nasal forceps the crusts and tenacious covering on the posterior wall of the naso-pharynx, which so often resist brushing, spraying and irrigating, can be easily removed. The recessus can be probed under supervision of the eye. The thickness of the cytogenic tissue, the depth of the furrows can be easily gauged—which it is rather difficult to do with the aid of the mirror. The recessus can be painted or scraped without the mirror's being soiled by blood or dimmed by a sudden movement of swallowing. Galvano-caustic treatment of the tonsil, or the lateral strands up to the tubal cushions, is quite feasible without injury to the velum, which is protected by the retractor. The advantages of this direct over the indirect method may be compared to those of Kirstein's "autoscopy" of the posterior laryngeal wall over laryngoscopy with the mirror. The author has made good use of the retractor, especially in the treatment of naso-pharyngeal catarrh in children of 5 to 7 years. The tonsils were frequently not large enough for amputation, although diseased, continually secreting, and the cause of cough, hoarseness, bronchitis. Such cases were cured by cauterizing directly, once or twice, with trichlor-acetic acid or the galvano-cautery—as well as secondary hyperemic swellings of the lower turbinals.

Finally, L. disapproves of Katzenstein's (*ibid*, Vol. V.) suggestion to make direct examinations with the head dependent. The author's statement, that direct inspection of the adenoid tissue while operating is not to be recommended, may be contradicted by the future experience of others who operate with general anæsthesia and dependent head.

MORGENTHAU.

Nasal Obstruction and the Symptoms of Cardiac Disease.

LOCKWOOD, GEORGE R.—(*New York Medical Journal*, January 16, 1897.)

The majority of subjects with cardiac disease are either rheumatic or gouty, either dyscrasia favoring catarrhal conditions of the mucous membrane. Witness the gouty pharyngitis, bronchitis, colitis. Whether rheumatic angina and rheumatic tonsillitis really represent catarrhal conditions may be doubted, but certain it is that whatever the exact pathological change may be, the result is commonly to induce a chronic catarrhal inflammation of these parts and their adjacent structures.

The texture of the turbinal bodies is such as to readily allow of their congestion and great enlargement, conditions which, it seems, are among the very earliest evidences of the general venous congestions that attend a failing heart. Even though the balance of circulation be restored by rest or by cardiac tonics, it is readily conceivable that a low grade of inflammation may be left behind, and result in hypertrophy and permanent enlargement. The ordinary symptoms induced are aggravated in a cardiac case by nasal obstruction.

Dyspnoea appears as the symptom most strikingly marked, and is altogether out of proportion to the other symptoms and physical signs of failing heart power. Nasal obstruction should be suspected in every case in which the symptom is well marked, and in which compensation in other respects seems to be well sustained. The dyspnoea may appear only on exertion; may be constant or may be most marked at night.

Dr. Lockwood calls attention to nocturnal attacks of dyspnoea as a later symptom. In many instances the dyspnoea is greatly aggravated by damp weather. It would seem that dyspnoea was be more readily induced by nasal obstruction in cardiac cases than in those with normal hearts, as even a moderate obstruction in these patients may be followed by most distressing dyspnoea.

Secondary symptoms attend the insufficient supply of good air. Headache of a dull aching character, drowsiness of mental hebetude are the most marked symptoms. Palpitation of the heart and praecordial oppression and distress are commonly observed.

SCHEPPEGRELL.

A Contribution to the Pathological Anatomy of Ethmoid Disease.

MACKENZIE, JOHN NOLAND, Baltimore.—(*Journal of Lar., Rhin. and Otol.*, February, 1897.)

As the result of his investigations of the pathological anatomy of ethmoid disease, Dr. Mackenzie offers the following conclusions:

1. That the so-called "myxomatous degeneration," described by writers on ethmoid disease, is not due to mucous change at all, but is the result of simple inflammatory action.

2. That authors have fallen into this error because they have approached the subject solely on its clinical side and without the aid of the microscope.

3. That purulent ethmoiditis may in many cases endure for years without producing any bone lesion whatever, and that, therefore, the proposition that all ethmoiditis tends toward and usually develops into necrosis has no foundation in actual pathological fact.

4. That the changes found represent successive stages of the same affection, and that, therefore, divisions and subdivisions of "ethmoiditis" tend to introduce an element of confusion into our pathological conception of the disease.

5. That the ethmoid region affords probably the most excellent place for the study of the origin of so-called nasal polypi.

6. Finally, of great importance is the striking similarity between the young granulation tissue found in the ethmoid region and the structure of the round-cell sarcoma, and hence the possibility of error in microscopic diagnosis in early and even in more or less advanced cases.

SCHEPPEGRELL.

To What Extent Does the Hypertrophied Pharyngeal Tonsil Atrophy at or About the Age of Puberty?

MERRICK.—(*Maryland Medical Journal*, December 12, 1896.)

Dr. Merrick, after a careful analysis of the literature on the subject of the atrophying of the hypertrophic tonsils at or about the age of puberty, offers the following conclusions:

1. Only a small minority of writers of the text-books examined say that these hypertrophied glands spontaneously atrophy at puberty.

2. Those who do say so furnish absolutely no statistical ground upon which they base their opinions.

3. No practical laryngologist of his acquaintance, who was interrogated, had ever seen a case undergo this atrophic change at puberty without the aid of operative measures.

In view, therefore, of the foregoing cumulative evidence against the proposition of spontaneous atrophy at puberty, Dr. Merrick states that it is high time that authors cease to advance this false doctrine, or give some very cogent reason for the faith that is in them.

SCHEPPEGRELL.

The Diathetic Origin of Tissue Overgrowth in the Pharynx of the Child.

MULFOLD, HENRY J., Buffalo, N. Y.—(*Medical Record*, January 23, 1897.)

Dr. Mulford believes that adenoid vegetation exists in

certain eases because of a diathesis. He bases this supposition on the fact that he has seen a number of cases in which there seemed to be a direct relation between the condition of the vault of the pharynx and the diathesis present in the child. In cases in which there seems to be a direct cause for the growth, the removal does not suffice for cure, the growth recurring if there be no after treatment. On the contrary, if the supposed cause is removed, the growth does not recur.

As it is apparently impossible that a diathesis can arise spontaneously in very young children, Dr. Mulford believes that the diathesis is inherited. In the two cases reported the children presented the condition shown by one or other of the parents. In the first case, the mother had chronic constipation, with a history of rheumatism, and in the child the same tendency appeared during the attacks. The urine was dark and heavy with solids; between the attacks it was light in color and of low specific gravity. A similar condition was presented by the other case. In both cases the operation gave only temporary relief until the constitutional condition had been improved.

SCHEPPEGRELL.

The Purulent Catarrh of Adolescents.

MULHALL, St. Louis, Mo.—(*The Laryngoscope*, February, 1897.)

Dr. Mulhall states that in purulent nasal catarrh of adolescents the real treatment is constitutional, and, without it, no improvement is usually obtained. Careful selection of diet, cold water, friction, deep breathing, gentle open air walking, 12 hours each day in bed in a sunny, well ventilated room, abdominal massage, gentle Swedish movement of the joints, a daily evacuation of the bowels and Bland's pills internally, constitute, in a measure, the treatment, which, when well adapted to each case, is found to bring about rapid improvement and eventual cure.

He also states that the use of strychnia and of the faradic current, one pole at the occiput, the other over the nose, and the cervical sympathetic has been of signal benefit. He has often seen turgescient turbinate tissue undergo considerable diminution of volume after 5 minutes' use of galvanism thus employed.

[The author describes the faradic current in the first part of the treatment, and afterward refers to "galvanism thus employed." As these two terms are obviously not

synonymous, it would be interesting to know which of the two has given the author the best results.—SCHEPPEGRELL.]

The Pathology, Diagnosis and Treatment of Atrophic Catarrh.
NORTH, Toledo, O.—(*Medical Journal*, January 2, 1897.)

Dr. North gives the following method in the treatment of atrophic rhinitis: He cleans the part thoroughly with resorcin solution, then takes a 20 per cent. solution of trichlor-acetic acid and applies to the edges of the atrophic space, not allowing it to come in contact with any other portion of the membrane. This produces slight irritation, and causes the nutrient pabulum of blood, and also the mobile leucocytes, to collect beneath the coagulated rind formed, and to become organized under its protection. The part should be well covered with solid vaseline and resorcin. If this treatment is followed up from time to time the part, if not too large, will become completely covered and the membrane be capable to perform at least a portion of its function. He has treated a number of cases by this method with good results.

SCHEPPEGRELL.

Chronic Rhinitis and the Erectile Tissue of the Nose.

PALAEZ.—(*El Siglo Medico*, January 17, 1897.)

El Siglo Medico (No. 2247, January 17, 1897,) publishes a resumé of a long article by Dr. L. Palaez, on chronic rhinitis and the erectile tissue of the nasal mucosa, read at the first Oto-Rhinological Congress in Madrid. The most important conclusions are as follows:

1. A rhinitis may have an origin traceable directly to the genital organs
2. This may be due to local or general disease, before or after birth.
3. The most frequent cause of chronic rhinitis, due to general trouble, is a disease of the erectile tissue, which tissue we find in the genital organs, where the cause may produce the same disease.
4. There are probably centers for reflexes of erection—both nasal and genital.
5. Nasal erectile tissue in man is analogous to the tissue in animals, which is stimulated by olfaction, and which is used by animals for sexual purposes.
11. Castration and like operations might be tried on monkeys suffering from chronic rhinitis.
14. The relation between the nose and genital organs should be more studied in animals.

HALE.

Abscess of the Nasal Septum with Report of Four Cases.

OWEN.—(*Western Medical Review*, December 15, 1896.)

The first case developed with symptoms of a common cold, and about the middle of the second month the nose began to flatten. When the abscess was opened a quantity of pus escaped. The case gradually improved under treatment, but the deformity remained permanently. The second case was a sequela of scarlet fever; the third case was due to the patient falling down some steps and striking upon his nose, and the fourth case was also traumatic. These cases were cured without any resulting deformity.

SCHEPPEGRELL.

Report of Interesting Nose and Throat Cases.

PARK, J. WALTER.—(*The Laryngoscope*, March, 1897.)

Angioma of Inferior Turbinated Body.—A patient who had suffered from frequent attacks of epistaxis, stenosis of the right nostril, and frequent headaches, was found to have what appeared to be a myxomatous growth of the inferior turbinated body. It was attached about the middle of the turbinal, end of a dark purplish color, very vascular and pediculated. It was removed with the cold snare. There were a number of hemorrhages difficult to control, which continued for a week. The tumor proved to be an angioma.

Sneezing Due to Eye-Strain.—A woman of 35 years applied for treatment on account of frequent sneezing attacks, which occurred daily and which were of a very severe character. The nostril appeared normal, and applications of the electro-cautery point were without benefit. Her eyes were then examined, and she was found to have compound myopic astigmatism in both eyes. When glasses were given to relieve the eye-strain, the paroxysms of sneezing disappeared.

Two similar cases have occurred in the practice of the reporter. In the first case there was no eye-strain, but a bright light at any time was sufficient to make the patient sneeze, although there was no pathological condition present in the nostrils. Looking toward the sun was sufficient to develop the paroxysms at any time, and, in some instances, even an electric light would produce this sneezing.

In the second case the patient suffered from eye-strain, for which I referred her to Dr. Pope. The sneezing, from

which she had previously been a continual sufferer, disappeared as soon as the correct glasses were applied.

SCHEPPEGRELL.

Why Are Operations Upon the Turbinated Bodies Becoming Less Frequent?

RICE, CLARENCE C.—(Proceedings of Section on Lar. and Rhin., New York Academy of Medicine, *The Laryngoscope*, March, 1897.)

Dr. Rice offers the following reasons for the lesser amount of surgical work upon the turbinated bodies:

1. A very small percentage of anterior and posterior turbinated swellings constitute neither true bony nor soft tissue hypertrophies, but are simply vascular distensions caused by some irritant in the nostril itself, or extra-nasal, and when the irritants are removed the vascular swellings disappear without more than cleansing and protecting treatment.

2. That the pale enlargements seen in so-called "nervous coryzas" are not often the primary lesion in the nostrils, but are secondary usually to abnormalities of the septum, although the nasal irritability is also due to an external irritant plus the "peculiar idiosyncrasy."

3. Nasal congestion and turbinated enlargement may be caused by anything interfering with the general circulation, by digestive disorders, by functional derangement of the various organs of the body, by faulty hygienic conditions, and especially by the excessive use of alcohol and tobacco. The correction of these errors is sufficient.

4. Conservative rhinologists feel that it is most important to check the large amount of unnecessary interference with the turbinated bodies.

5. It has been found that by proper cleansing and by suitable protection of the nasal mucous membrane, so-called hypertrophies will often disappear without the use of destructive agents.

SCHEPPEGRELL.

Fibro-Chondromata of Bronchial Origin.

DE ROALDES, A. W., New Orleans.—(*New York Medical Journal*, February 6, 1897.)

A male infant of 6 weeks produced a curious sound while breathing and had difficulty in nursing, which gave rise to spells of suffocation. On examination a movable growth, hidden in the post-nasal space, emerged imperfectly from behind the soft palate, and changed its location during efforts of crying and coughing. On digital examination a hard cartilagenous nucleus was felt, the mass

appearing to be attached to the left side of the buccal pharyngeal cavity.

The abnormal growth was removed by means of the wire snare, upon which the respiration at once became natural. The point of implantation was then found to be the left side of the middle part of the posterior pillar of the soft palate, covering a surface of the size of a split pea. The growth was found to be a dermoid tumor. SCHEPPEGRELL.

Photography of the Nasal Cavities and of the Larynx by Means of Roentgen Rays.

SCHEIER.—(*The Medical Chronicle*, February, 1897.)

A metallic object, such as the sound introduced into the nasal cavity, can be recognized in its entirety by means of the fluoroscope, even when some portion of its length has penetrated into the posterior regions of the nasal fossæ.

In experimenting by placing foreign bodies in the nostrils, metallic substances and beads could be distinguished, but the stones of fruit were almost invisible.

Dr. Scheier claims that by means of photographic proof the outlines of the sinuses were clearly defined, and in the antrum the root of one of the teeth was seen as a well marked projection. In searching for the exact position of a bullet, or other foreign body, it is advisable to take views in different positions. By these means the sense of the perspective is not lost, as is likely when the object is viewed from a single position.

Foreign bodies in the tonsils can probably be located by this method. The larynx in the living subject is observed on the fluorescent screen as a clear image, capped by a shadow which represents the hyoid bone. During phonation a great number of linear shadows become apparent, of which the signification has not yet been determined. Tuberculous glands surrounding the larynx and trachea were also plainly visible. SCHEPPEGRELL.

A Case of Curious Malformation of the Nose.

STEWART, W. R. H.—(Proceedings of the Laryngological Society of London, *The Journal of Lar., Rhin. and Otol.*, March, 1897.)

The patient, 25 years of age, desired to be relieved from what was to all appearances a bifid nose. He stated that when quite a baby a large tumor was removed from the nose, and he does not recall the time when his nose was different from its present shape. The case was evidently not

one of duplication of part of the organ. The mesial nasal process in the embryo was bilateral in character, consisting of two prominent lateral portions separated by a mesial groove. Normally this groove was obliterated by the approximation and coalescence of the lateral portions, which were ultimately represented by the filtrum columella nasi and internal boundary of each anterior nares. In the negro type the mesial groove, in a measure, persisted at the tip of the nose.

In the present case an operation scar corroborated the history of the removal of a tumor in infancy. Dermoid inclusion cysts, though rare, were found in the middle line of the nose. The author suggested that at an early date in foetal life such an inclusion cyst was formed, and that this presented a mechanical obstacle to the normal coalescence of the prominent extremities of the globular processes, *i. e.*, the lateral portions of the mesial nasal process.

SCHEPPEGRELL.

A Brief Report of the Results of a Bacteriological Investigation of the Nasal Mucus in One Hundred Cases of Chronic Nasal Discharge.

VANSANT, E. L., Philadelphia. — (*Journal of American Medical Ass'n*, February 27, 1897.)

The patients included in the investigations all had one thing in common, viz., a chronic nasal catarrh. None of them were subjects to any acute febrile affection, but were simply the walking cases seen at the office and in the Polyclinic and Howard Hospitals. Great care was exercised in their examinations to exclude all those showing any of the well-known clinical signs of diphtheria. The examinations embraced 113 cultures of specimens taken from 100 different patients. Of these 25 suffered from chronic atrophic rhinitis, 31 from chronic hypertrophic rhinitis, 14 from chronic rhinitis, 16 from chronic purulent rhinitis, 7 from nasal syphilis, 2 from diseases of the accessory sinuses, 4 from acute rhinitis, and 1 from fibrinous rhinitis.

The bacteriological examination showed the presence of diphtheria bacilli in no less than 30 of the cultures examined, these cultures representing the discharge found in 26 different patients. In 4 additional cultures, organisms strongly resembling diphtheria bacilli were present. In 58 cultures, staphylococci were found. Of these, 7 were recognized as *staphylococcus aureus*, 5 as *staphylococcus*

albus, 1 as *staphylococcus citreus*. The great majority of the cultures contained many diverse forms of organisms, such as bacilli, cocci, diplococci, etc. *Leptothrix* was found in 4, *bacillus subtilis* in 6, and yeast cells in two of the cultures.

Of the 26 patients with diphtheria bacilli in their nasal secretions, 11 were cases of chronic atrophic rhinitis, 3 were cases of chronic purulent rhinitis, 5 were cases of chronic rhinitis, 3 were cases of nasal syphilis, 1 was acute rhinitis, and 3 were cases of hypertrophic rhinitis. For each disease examined the proportion of cases with diphtheria bacilli was as follows: Eleven in 25 cases of atrophic rhinitis, 3 in 16 cases of chronic purulent rhinitis, 5 in 14 cases of rhinitis, 3 in 7 cases of nasal syphilis, 1 in 4 cases of acute rhinitis, 3 in 31 cases of hypertrophic rhinitis, none in 2 cases of accessory sinuses, none in 1 case of fibrinous rhinitis.

The author calls attention to the importance of a careful clinical and bacteriological examination of the nasal chambers before any operative procedure is undertaken. He believes the frequent presence of the diphtheria bacillus in atrophic rhinitis to be due to the fact that this pathological condition offers suitable soil for infection, not only by the diphtheria bacillus, but by many other germs.

[The opinion of Dr. Vansant as to the cause of the presence of the diphtheria bacillus in atrophic rhinitis is interesting, as he believes that this pathological condition is simply a suitable soil for this micro-organism, and not, as has been supposed by other investigators, that the diphtheria bacillus is an etiological factor in this disease. If this opinion is substantiated, it will be a death blow to the diphtheritic serum therapy which has been advocated for atrophic rhinitis.

[This interesting article of Dr. Vansant's is simply a preliminary report. The proposed investigation upon animals to determine the virulence of bacilli found will be an important addition to our knowledge of this subject.—SCHEPPEGRELL.]

III.—MOUTH AND PHARYNX.

An Adeno-Carcinoma of the Soft Palate with a Pedicle.

BAUROWICZ, ALEX., Cracow (*Fraenkel's Arch. f. Lar.*, VI, Berlin, 1897)

A patient, 67 years of age, in excellent general health, had been feeling something movable in his throat for the

last 15 years, which hindered swallowing and disturbed sleep, although giving no pain whatever. On opening his mouth, after seemingly first moving something forward which lay on his tongue, a tumor appeared, of the size of a hen's egg, lying on the tongue and reaching to the hard palate, thus closing out the view of all parts further back.

On B.'s introducing the index finger and tracing the growth to its insertion at the free margin of the soft palate, dyspnoea suddenly set in, due to pressure on the epiglottis. B., therefore, quickly tried to lift the mass with the second finger. The tumor could be removed with the two fingers with but very little force. Bleeding was very slight. The remnant of the pedicle was snipped off with a pair of curved scissors. The tumor was 3.4 c.m. broad, 2.5 c.m. high and 7.7 c.m. thick. A section showed it to consist of strands of connective tissue arranged like a fan, with pinkish patches interspersed. Microscopically, there appeared numerous nests of epithelial cells which originated from the epithelium of the glands; besides, normal gland structure was seen. It was, therefore, a case of fibro-adenoma in which, later on, atypical proliferation of the epithelial cells set in. Everywhere numerous round cells were observed in the connective tissue, pointing to activity of growth in the neoplasm. The patient did not return for further treatment.

MORGENTHAU.

Report of a Plastic Operation for Restoring the Lower Lip.

DOWD, CHARLES N.—(*Medical Record*, February 20, 1897.)

The operation is a modification of one described by Malgaigne. The horizontal incisions from the angles of the mouth should be marked with the point of the knife, before cutting, to insure symmetry. They should be carried backward two inches, as far as is necessary to allow the approximation of the flaps. These incisions are carried down to the mucous membrane, but it is divided one-third of an inch higher than the skin, so that it may be laid over the edge of the newly-formed lip and stitched to the skin without tension. A good vermilion border is thus formed.

The excess of tissue, which is apparent in the cheeks above the incisions after the approximation of the flaps, is remedied by the removal of the wedges of skin, which are usually taken, so that the cicatrix will be in line of the labio-nasal folds.

In liberating the flaps so as to allow their approximation,

it may be necessary to divide, at the mental foramen, the mental branch of the inferior dental nerve. This need not be feared, as the branches of the facial nerve supply the power of motion to the newly-formed lip, and the diminution in sensation is not troublesome. The divided nerve fibers apparently unite after a few weeks.

The facial arteries and veins are usually severed in the submaxillary spaces, but the flaps are well nourished without them.

SCHEPPEGRELL.

Extirpation of the Tongue for Epithelioma by Kocher's Method.

JOHNSON, A. B.—(Proceedings of the Society of the Alumni of Bellevue Hospital, *New York Medical Journal*, January 2, 1897.)

Dr. Johnson presented a man 42 years of age, a laborer, who had been admitted to the Roosevelt Hospital on October 5, 1896. The family history was negative, and there was no history of syphilis or tuberculosis. He was a hard drinker and smoked a pipe a good deal. One year ago a small papule appeared on the right border of the tongue midway between the base and the tip. After a time the patient began to suffer from darting pains in the growth. Five months ago chewing and speaking became painful, and after this the pain and discomfort increased rapidly in severity.

On admission to the hospital he was found to be fairly nourished, but his circulation was poor. His tongue was coated and there were many carious teeth. On the right side of the tongue there was a hard growth extending from the base of the tongue well forward toward the tip. It was elevated one-fourth of an inch above the level of the tongue, and on a portion of its surface there was a shallow ulcer covered with a thin slough. The growth had crossed the median line near the base of the tongue, and, to some extent, involved the floor of the mouth, the right anterior pillar of the fauces, and the tonsils. The movements of the tongue were much restricted. No enlarged lymph glands could be felt in the maxillary region.

On October 5, 1896, the patient was operated upon under ether, a preliminary tracheotomy having been performed to allow of the administration of ether through the laryngeal opening. Kocher's incision for the removal of the tongue was made, and the contents of the right submaxillary triangle together with the tongue was removed. Two slightly enlarged glands were found just beneath the angle

of the jaw and these were removed. The right lingual artery was tied in the wound; a large sponge was inserted in the pharynx, and the floor of the mouth opened. The tongue was removed with the scissors, except a small portion on the left side about two inches long and three-fourths of an inch wide. All of the right tonsil and a portion of the anterior pillar of the fauces on that side were cut away. The pharyngeal sponge was then removed and the cavity of the mouth packed with iodoform gauze. A strand of the gauze was then passed from the floor of the mouth through the wound for drainage, and the remainder of the wound closed by sutures.

Rectal feeding was practiced for four days, after which the tracheotomy tube was removed and the patient fed by the stomach tube passed down the œsophagus. On the fifth day the patient was allowed up for a time; on the ninth day he began to take liquid food by the mouth, and by November 1 the external wound was practically closed.

In conclusion, the author calls attention to the remarkable way in which the small portion of the tongue left behind adapted itself to the new conditions in these cases; it had rotated into the median line, became adherent to the floor of the mouth, was movable, and formed a small but useful organ.

SCHEPPEGRELL.

Instruments Used in Tonsillotomy by Electro-Cautery Dissection.

PYNCHON, Chicago.—(*The Laryngoscope*, February, 1897.)

Dr. Pynchon, in anæsthetizing the tonsils, prefers the hypodermic injection of cocaine. There is no appreciable effect derived from making this injection into the tonsils, but a few minims of injection into the mucous membrane of the pillars will give a good result. He recommends a special syringe for this purpose, but the ordinary syringe with the special point for tonsillar injection is usually sufficient. Anæsthesia may also be obtained by applying the cocaine to the tonsil with the usual applicator.

In drawing the tonsil forward toward the median line, Dr. Pynchon uses a variety of cautery points bent at angles from the shaft varying from 30° to 90°, with the bend either vertical or lateral from the line of the handle, and as these are reversible, the former can be directed either up or down, and the latter either to the right or left. The cauteries $5\frac{1}{2}$ inches in length have been found to be the most convenient. He also describes a useful tongue depressor to be used during this operation.

SCHEPPEGRELL.

A Case of Black Tongue.

SEMON, FELIX, London.—(Proceedings of the Laryngological Society, London, *The Journal of Lar., Rhin. and Otol.*, March, 1897.)

A man of 40 years applied for a large patch of enormously elongated, hair-like, inky black papillæ in the region of the papillæ circumvallatæ. Under the local use of a 5 per cent. ethereal solution of salicylic acid, mixed with a 5 per cent. collodion solution, and followed by an application of peroxide of hydrogen by means of a plug of cotton wool applied to the affected region several times a day, so much improvement had resulted that only the traces of the affection were still visible. This plan had been recommended by Unna, of Hamburg.

SCHEPPEGRELL.

Symmetrical Disease of the Lachrymal and of the Salivary Glands of the Mouth.

TIETZE, A., Breslau.—(*Beitr. z. Klin. Chir.*, XVI, 3. *Deutsch. Med. Woch.*, 1897, No. 8.)

Mikulicz has described a peculiar disease as symmetrical swelling of the lachrymal and of the oral salivary glands, and thought it caused by some chronic infectious process. The case reported by the author tallies with this description, as well as six cases culled from literature. Histologically, he characterizes the disease as a proliferation of lymphoid tissue in the glands named, and compares it with the hyperplastic changes to which the pharyngeal lymphatic ring is so prone. The lachrymal glands are generally affected most, sometimes without any involvement of the salivary glands.

MORGENTHAU.

IV.—LARYNX.

Primary Tuberculosis of the Larynx.

ARONSOHN, ED., Ems, Nice.—(*Frankel's Arch. f. Lar.*, V, 210.)

While most important investigators of to-day do not hesitate to acknowledge the existence of primary laryngeal tuberculosis, it is impossible as yet to decide how much time may elapse before secondary infection of the lungs follows. Sommerbrodt's experiments on rabbits and dogs make it seem probable that the lungs may be infected just as quickly from the larynx as *vice versa*. Just as the larynx may be tuberculized, either at the same time or much later, by the mucus from the lungs, so may the affection spread from above downward after the lapse of less or greater time. Very surprising is the view of Stoerk, of Vienna,

who makes the diagnosis of tuberculous disease of the larynx only when signs of the same disease are found in other organs; otherwise, he speaks of chronic catarrhal ulcers. Upon every tuberculous ulcer in the larynx, or in the skin, tongue, lips, pharynx, even the nose, he looks as an expression of a constitutional tuberculous disease. Many experienced authors in all branches of medical science (Eichhorst, Germain Sée, Dieulafoy, Cornil, etc.) believe in primary laryngeal tuberculosis. M. Schmidt voices the opinion of laryngologists who have devoted special attention to laryngeal tuberculosis: "Primary tuberculosis may appear in any part of the larynx. These are rare but positive cases, authenticated post-mortem. I myself have seen a number of them, especially as tumors on the vocal and ventricular bands, but also as ulcers." Nobody would venture to base a diagnosis on a laryngeal catarrh only. Schmidt further states that if one vocal cord only is reddened and thickened, it is not due to catarrhal laryngitis, but to tuberculosis, or syphilis, or injury. Most probably such cases, as well as the sclerotic forms of incipient tuberculosis, will be called syphilitic until the tuberculous nature of the unilateral chondritis will be recognized by some accident. And by that time, the lungs will have been infected from the larynx. Since it has become custom to remove pieces of tissue from the larynx for microscopical examination, the chapter of tuberculous laryngitis has received many valuable additions. What is termed any early tubercular symptom by one is ascribed to simple catarrh by another; and changes called early by one are pronounced advanced by others. It must, for instance, not be expected of Keller that he will ever observe primary laryngeal tuberculosis since he writes that the earliest changes in tuberculosis of the posterior laryngeal wall are prominent infiltrations and jagged excrescences, and that tuberculous ulcers in the larynx are to be diagnosed by the evidences of pulmonary phthisis and the exclusion of syphilis. Tuberculous processes in the nose and pharynx have been rather frequently recognized without the diagnosis of pulmonary phthisis. In Pluder's case pulmonary symptoms were wanting for many years. In Gottstein's article, "Pharyngeal and Faucial Tonsils as Ports of Entry for Tuberculosis" (abstracted in the October number of the ANNALS), it was shown, as a result of systematic examination of these organs, that tuberculosis

was found in 10 to 12 per cent. We know that in the noses of many there are tubercle bacilli in considerable number; and even if the tissues of the upper respiratory tract are well protected against the invading bacilli, the direct method of infection of the larynx can be easily understood. Moreover, if tuberculosis can be acquired not only with a hereditary disposition, but by inhalation also, the larynx, whose vulnerability is not less than that of other parts of the upper respiratory tract, must be affected primarily as frequently as the nose. In regard to the latter organ, in which tuberculosis is found but rarely, Strauss may be quoted, "that the means of defense very often remain victorious in the fight with the invaders, and that the nasal mucous membrane is unfavorable territory for Koch's bacilli." The laryngeal mucous membrane, on the contrary, is known to be affected in almost half of the cases of pulmonary phthisis. The author then gives a detailed history of two cases, which is valuable because the patients were observed by many experienced physicians for many years, although autopsies were not made. The first patient was a man of 26, whose father and three brothers had died of tuberculosis of the larynx and lungs. He became hoarse suddenly "on catching cold," without any previous illness. All physicians pronounced him tuberculous, syphilis suggesting itself only because of the absence of pulmonary symptoms. Anti-syphilitic treatment proved ineffectual. In the fourth year of the disease miliary tuberculosis invaded the hitherto apparently intact lungs with chills, and brought on death within four weeks. The second patient was a man of 30, whose uncles and brothers had succumbed to tuberculosis. His disease began with fever and pain in the throat; at the same time there was suppuration in the mastoid process. These symptoms were all ascribed to tuberculosis by several competent observers. The lungs were pronounced healthy by numerous authorities. When the author first saw him, in the third year of his disease, he found both apices of the lungs affected. The patient improved greatly with laryngeal injections of menthol. There was no fever; he had coughed but rarely, and expectorated only occasionally and a little at a time.

MORGENTHAU.

Lignosulphite in the Treatment of Laryngeal Tuberculosis.

BRAMESFELD, F., Bonn.—(*Deutsch. Med. Woch.*, April 1st, 1897, No. 14, p. 20.)

Lignosulphite is an aqueous destillate from different

lyes used in the manufacture of cellulose. The pharmaceutical product is a light yellow, turbid, acid fluid, with a penetrating odor of sulphurous acid. According to the author's statement, it is "not a specific for tuberculosis, but better capable than any known remedy of preparing the diseased body for the thearpeutics of today." It is of great value in the treatment of laryngeal tuberculosis in ameliorating dysphagia and lessening the severity of the cough, as it liquifies and increases the secretion to a marked degree. It thus flushes the air passages, as it were, and hinders stagnation of the purulent masses. As a result of the greater ease of expectoration, the feeling of oppression is greatly diminished and the patient encouraged to take more exercise, etc. Lignosulphite should first be used in 10 per cent. solution. The author never increased the percentage to more than 30, because cough and nausea easily set in. The purpose was always served with solutions of this strength. His inhaling apparatus consisted of a bottle having a cork with two holes for tubes large enough to allow the air to enter freely and become impregnated with the fumes of lignosulphite.

MORGENTHAU.

Tracheal Injections of Creosote in Laryngo-Pulmonary Tuberculosis.

BOTEY, Barcelona.—(First Spanish Con. of Otol., Rhin. & Lar., Section on Laryngology, *Journal of Lar., Rhin. & Otol.*, February, 1897).

For over five years Dr. Botey has injected antiseptic, and particularly creosoted, solutions into the laryngo-tracheal passages, in cases of tuberculosis of the larynx and lung. Commencing with a few cubic centimeters, he has sometimes injected as much as 100 grammes of antiseptic fluid.

This treatment is favored by the extraordinary power of absorption of the respiratory mucosa (greater than that of the gastric mucosa, and even of the hypodermic route) together with the feeble sensitiveness of the mucosa below the pharyngo-laryngeal region, which explains the facility of the method and the tolerance of the organism. Without claiming marvelous results, Dr. Botey states that the clinical effects, both general and local are encouraging, and are superior to those obtained by drugs administered through the stomach.

SCHEPPEGRELL.

Lead Palsy of the Laryngeal Muscles.

FLATOW, ROBERT, Berlin.—(*Deutsche Med. Woch.*, No. 3, January 14th, 1897.)

Toxic paralysis of the laryngeal muscles are at last receiving the long merited attention. The report of a new case should be welcomed. The patient was a painter, 47 years old, who had been working with lead paint for many years. For four weeks he had been troubled with pain in his limbs; one week ago hoarseness and a slight, dry cough set in. Sudden dyspnoea, so that the stridor can be heard from afar; pulse, quick and tense; urine contains albumen. Slight swelling of whole laryngeal mucous membrane; ventricular bands, thickened and swollen, hiding the greater part of the vocal cords from view. Left vocal cord is fixed at the middle line; the right, abducted very slightly in respiration, so that but a small chink is left for breathing. The right vocal cord is brought to middle line in phonation. Rest in bed was of but little avail, so that tracheotomy was considered. The energetic use, however, of derivatives (ice, leeches, purgatives), brought about great improvement. On the next day, the swelling in the larynx was less; otherwise, but little change. During the next days, improvement continued. The treatment for the next two weeks consisted of potassium iodide and baths. Then the right cord was abducted distinctly better, although not normally. Patient could leave the hospital one week later, with a loud, sonorous, somewhat hoarse voice. When examined after a few weeks, no change was found. Semon's law, that in palsies of the laryngeal muscles the abductors are affected first, does not hold good in all cases. Since it refers to all diseases of the recurrent nerve, peripheral as well as central, the theory is to be entertained that there may be a primary disease of the muscles, affecting sometimes one, sometimes the other group of muscles. Of great practical value is the fact, first pointed out by Semon, that unilateral posticus paralysis need not be accompanied by any clinical symptoms which point to the larynx. Laryngoscopic examination of workmen inclined to lead poisoning is, therefore, indicated, as those affected with unilateral abductor paralysis may be placed in jeopardy of life if the other cord should become suddenly affected.

MORGENTHAU.

Post-Mortem Appearance of a Laryngeal Stenosis Due to Juxtaposition of the Cords.

FRAENKEL, B., Berlin.—(*Berl. Klin. Woch.*, 1897, No. 11, p. 234.)

At the meeting of the Berlin Medical Society of February 24th, 1897, F. demonstrated a specimen which is of the greatest interest to those physicians who visited his clinic within the last eight years. It was the larynx of a patient who was a frequenter of the Berlin Throat Polyclinic since 1888. At that time he had been tracheotomized by M. Schmidt on account of sudden dyspnoea and treated with Schroetter's dilatation tubes. This was continued at Berlin, a membrane split which had formed in the larynx, and various granulations removed which had sprung up about the upper part of the canula. The right vocal cord was permanently fixed in the middle line, so that it was impossible to move it either by a probe or intubation tubes. The left cord could be brought inward up to the right cord, but the movement of abduction was greatly hampered; it never passed beyond the cadaveric position. Finally, by the means of continual intubation, the patient could dispense with the canula, and breathe through his larynx, to be sure with the aid of the tracheal fistula. He met with a violent death recently. The autopsy confirms the diagnosis of cricoid perichondritis. The larynx is opened from behind, the postici muscles dissected away, showing that, on the right side, the greater part of the cricoid cartilage is missing. On the left side, there is also roughness of the cartilage. The right cricoarytenoid joint is completely ankylosed and united with the cricoid cartilage, so that any movement is impossible. This is, therefore, one of those cases in which, as a result of cricoid perichondritis (probably of a specific nature), the vocal cord is suddenly fixed in the middle line; probably because of a dislocation of the joints when the necrotic part of the cricoid cartilage is extruded, or mainly because the postici muscles are thus deprived of their insertions. The muscles showed no signs of fatty degeneration, but looked quite fresh and red. MORGENTHAU.

Laryngeal and Post-Nasal Photography With the Aid of the Arc Light.

FRENCH, THOS. R., Brooklyn.—(*New York Medical Journal*, January 23, 1897.)

Dr. French has devised a photographic apparatus, by means of which laryngeal and post-nasal images may be photographed with the aid of the arc light. The *modus*

operandi is the same as in the method described by Dr. French for using the sunlight condenser for this purpose. The beam of light is caught upon the forehead mirror several inches inside of the point of focus. Good photography can easily be obtained at the first sitting, though sometimes two sittings are necessary. A number of photographs of the larynx and post-nasal space are given, showing the value of this method. SCHEPPEGRELL.

On Onodi's Phonatory Center.

GRABOWER, Berlin.—(*Fraenkel's Arch. f. Lar.*, 1897, VI, 1, p. 43.)

Onodi's statement (*Berlin. Klin. Woch.*, 1894, No. 48,) in regard to the location of a center for phonation and adduction of the vocal cords is contradicted by Klemperer's irrefragable but single experiment. But even if this center cannot be in the space between the posterior corpora quadrigemina and 1 m.m. behind them, the author does not think it proven by Klemperer's experiment that such a center might be not between 1 and 8 m.m. behind the corpus quadrigeminum. The existence of this center would, however, be of such eminent laryngological interest that G. has searched the whole territory designated by Onodi. He made eight experiments on seven dogs "with such a decided result as to decide the whole question." They cover, in small intervals, the space extending from the posterior corpora quadrigemina, a distance of 12 m.m. into the fourth ventricle, and show, "without any doubt," that a phonatory center does not exist there. The ninth experiment, to examine the floor of the ventricle more distally, resulted in locating the center 14 m.m. and a few m.m. more behind the posterior corpora quadrigemina. The experiments were carried out in the following manner: After the animal had been examined with the laryngoscope and found to be normal, the obturatory membrane was exposed, the surrounding bone removed with bone forceps, the membrane split, and the cerebellum destroyed as far as it covers the fourth ventricle. Thus the whole floor was brought into view and cut in its whole width. Then the larynx was watched both in regard to spontaneous as reflectory phonation. The results of the operation were always investigated post-mortem. The incisions were all at least $\frac{1}{2}$ c.m. deep; some, much deeper; all extending across the whole width of the ventricle. None of these injuries affected, in the least, the voice or the phonatory position of the cords.

But on incising 14 m.m. behind the corpora, barking as well as phonatory function were abolished. There was only a single expiratory sigh, generally on peripheral irritation. The glottis gaped for more than 3 m.m. The cords were only brought as far toward the middle line as they were abducted in inspiration; the function of adduction was abolished. This remained unchanged after a second incision, 16 m.m. behind the posterior corpora. The spot found is at the junction of the anterior and middle third of the ala cinerea; thus confirming the result arrived at by Semon and Horsley. MORGENTHAU.

Total Extirpation of the Larynx for Squamous-Cellled Epithelioma.

LACK, LAMBERT.—(Proceedings of the Laryngological Society of London, *Journal of Lar., Rhin. & Otol.*, February, 1897.)

The patient, a man of 58, had suffered from hoarseness for about two years. The growth involved the right ventricular band and vocal cord, the anterior two-thirds of the left vocal cord, and extended downward to the first tracheal ring.

The operation was performed on August 15, last. No preliminary tracheotomy. The larynx was exposed by the usual vertical median incision and two transverse incisions, one along the lower border of the hyoid bone, and one about an inch above the sternum, both reaching from sterno-mastoid to sterno-mastoid. The larynx and trachea were then freed all round and separated from the œsophagus behind. The trachea was then cut across and sutured to the skin all round in the lower transverse incision. By this means the trachea was completely shut off from the wound, and there was no danger of any blood, etc., entering it during the subsequent steps of the operation. The larynx was now cut away from the pharynx and removed entire.

The hole left in the pharynx was now very carefully closed by a closely set series of sutures of fine catgut, uniting mucous membrane to mucous membrane. Over these a similar series of sutures was placed, uniting the muscular and membranous walls of the gullet, but not piercing the mucous membrane. To strengthen these, other layers of sutures were inserted, bringing all the tags of divided muscles together in the middle line. In this way the wound was obliterated and a strong wall built up, completely shutting off the pharynx, and able to resist the

strain of swallowing. The skin was then brought together except for a small triangular space at the upper corner. The entire wound, with the exception of this space, healed by first intention. The patient was from the first day and throughout able to swallow without pain or difficulty. There was no danger of fluids passing from the pharynx into the wound, exciting inflammatory secretions there, and passing thence down the trachea. Thus the danger of septic lung infection was minimized. The case ran an aseptic and afebrile course, and the patient was walking about in four days, having suffered no more than after a simple tracheotomy. Thus also the tedious and painful after-treatment, involving frequent dressings and packing of the wound, and the constant passage of the œsophageal sound, were done away with. Unfortunately, in the first instance, the cut was too close to the lower limit of the disease, and later two more rings of the trachea had to be removed.

The patient has no voice, but can whisper distinctly, and is gaining power. He is otherwise quite well, and is able to dispense with a tracheotomy tube.

SCHEPPEGRELL.

A Method of Examining the Larynx in Infants.

LACK.—(*Journal of Lar., Rhin. & Otol.*, April, 1897.)

In this method, the infant is supported in the usual position for laryngoscopy. The index finger of the left hand is placed well into the mouth, and the terminal phalanx hooked around the hyoid bone, which is pulled forward. The rest of the finger acts as a tongue-depressor and the knuckle as a gag. The left thumb placed under the chin serves to steady the head. If a small laryngeal mirror be now introduced in the usual way, the larynx can be quite easily seen. The method causes no pain, no anæsthetic is required, and it is applicable to every case.

For some months he examined the larynx of every infant who came under his care, and almost invariably succeeded at the first attempt. In older infants, those with teeth, he used a curved tongue-depressor—a copper spatula suitably bent—instead of the finger, and this method may be preferred by those laryngologists whose fingers occupy an inconvenient amount of the space afforded by an infant's mouth. It is not quite so easy, and some means of opening the mouth may be necessary. The

younger the infant the less is the resistance, and the easier the examination.

SCHEPPEGRELL.

An Additional Note Upon Five Hundred Cases of Laryngeal Neoplasms.

MASSEI, Naples.—(*The Tri-State Medical Journal and Practitioner*, February, 1897.)

Neoplasms of the larynx are not of as frequent occurrence as formerly. Even if we allow for the circumstance that the earlier laryngologists had a wider field for operation on account of the fact that these cases had hitherto been neglected, still this decrease in the occurrence of laryngeal neoplasm is, nevertheless, shown by statistics,

Of 500 cases of laryngeal neoplasms, the cases could be histologically and clinically divided as follows:

	Cases.
Papillomata.....	183
Fibromata.....	156
Epitheliomata.....	67
Cystic Tumors.....	27
Sarcomata.....	10
Myxomata.....	6
Encephaloid.....	5
Amyloid Tumors.....	4
Adenomata.....	2
Gummata.....	2
Nature not determined in.....	38
	<hr/> 500

In cases of benign tumors, and where the voice alone is impaired, the results are so satisfactory that we are justified in giving an excellent prognosis. Fibromata, however, may in some instances require a long consecutive treatment before the voice is completely restored.

Recurrence, which is so constant in malignant neoplasms and so frequent in papillary growths, is sometimes also met with in cystic and fibromatous tumors, but even in these cases perseverance will accomplish good results.

Dr. Massei has never observed transformation of a benign tumor, operated by the endo-laryngeal method, into a malignant one. When the clinical signs change, it is an indication not of the transformation of the tumor, but of the mistake of the original diagnosis.

SCHEPPEGRELL.

The Importance of Urinalysis to the Laryngologist.

MULFORD, HENRY J.—(*The Laryngoscope*, February, 1897.)

Dr. Mulford states that urinalysis is always of value in the following classes of cases: Those in whom rheumatism is suspected; where there is frequent nose bleeding; always in obscure cough; in profuse catarrh of the nose or throat; where the individual is subject to frequent "colds;" in hay fever; and in children presenting enlarged tonsils and nasal occlusion. In some obstinate and obscure cases the blood should also be examined.

SCHEPPEGRELL.

Removal of a Bead from a Child's Air Passages.

NOLTENIUS, Bremen.—(*Fraenkel's Arch. f. Lar.*, 1897, VI, 1, p. 47.)

A boy of 4 years had drawn a bead (8 m.m. thick, with numerous facets,) into the trachea by aspiration. It could be heard "flopping" at a distance of several yards whenever the patient coughed. In the mirror, a glimpse of the foreign body was obtained, but endo-laryngeal removal was impossible on account of the patient's restlessness and slight dyspnoea. Holding him up by the legs and slapping his back were also in vain. Tracheotomy had to be postponed for external reasons. On the third day the child had a sudden attack of strangling, due to the bead's slipping into the left bronchus. There was no respiratory murmur over the left half of the chest, and hardly any respiratory movement, while the right half moved vigorously; but there was no real despnoea. Tracheotomy was performed, but all attempts at removal were unsuccessful. The next day a copper probe was introduced into the left bronchus; then a catheter, in the hope of removing the bead by suction. On the next day, after another attack of asphyxia, breathing could be heard over the left lung. The patient was inverted, began to be restless and to cough; the "flopping" and coughing showed that the bead had returned to the trachea.

The margins of the tracheotomy wound (the tube had been temporarily removed,) were held apart by hooks, and the bead caught with a forceps as it moved rapidly to and fro. The slight elevation of temperature, both before and after the removal of the foreign body, which had been in the air passages six days without much irritation, demonstrates again how tolerant the mucous membranes are of foreign bodies and instruments. The slight attack of bronchitis subsided after a few days. Freely movable

bodies in the trachea should be removed by immediate tracheotomy.

MORGENTHAU.

The Effect of Cigarette Smoking on the Respiratory Mucous Membrane.

RICE, CLARENCE C.—(Proceedings of the Medical Society of the State of New York, *New York Medical Journal*, February 13, 1897.)

Dr. Rice states that almost without exception cigarette smokers indulge in the habit to excess. The constant contact of the smoke with the mucous membrane of the respiratory tract results in the development, in those predisposed to disease of this portion of the body, of pulmonary conditions much earlier in life than would otherwise be the case. Statistics show that the manufacture of cigarettes is now carried on on such an enormous scale that there is an allowance of about 50 cigarettes for every person in this country.

Dr. Mulhall, of St. Louis, himself an old cigarette smoker, maintains that the real effects are chiefly due to inhaling the smoke deep into the bronchial tubes. Dr. Rice states that while most writers say that it produces only a moderate degree of congestion of the mucous membrane, his own experience indicates that it causes advanced atrophic nasal catarrh, with dryness and congestion of the pharynx. He believes that every person who has used cigarettes for a long time suffers from a chronic cough.

SCHEPPEGRELL.

A Simple Method for Preventing the Dimming of Mirrors.

WALL, GEORGE, London.—(*Journal of Lar., Rhin. and Otol.*, April, 1897.)

This method consists simply of rubbing the glass all over with a piece of ordinary dry soap. The film of soap left on the mirror is wiped off by means of a soft rag or handkerchief, and it is then found that the mirror can be breathed on without any cloudiness resulting.

This method has its limitations, especially as regards the necessity of sterilizing each time that the mirror is used. There are some cases, however, in which this method might prove of convenience.

SCHEPPEGRELL.

V.—DIPHTHERIA.

The Klebs-Löffler Bacillus in Apparently Normal Throats and Noses.

GROSS, H. W.—(*Gaillard's Medical Journal*, March, 1897.)

Though it be generally admitted that the chief etiological factor in true diphtheria is the Klebs-Löffler bacillus, yet the absence of it in many cases suffering from the disease and, on the other hand, the presence of it on many apparently healthy mucous membranes, surrounds this organism with a certain amount of uncertainty, and too often puts doubt in the minds of those whose work has not let them into the personal study of the organism.

From the investigations conducted on apparently normal throats and noses, it was shown that out of 316 cases, the total number examined, 26 at one time or another showed the presence of Klebs-Löffler bacillus. This gives a percentage of 8.2. Out of these 26 cases showing the organism, 2 may be said to have had clinical diphtheria. Omitting these 2, we may say that out of 314 normal throats and noses examined 7.9 per cent. contained the bacillus of diphtheria. The average persistence of the bacillus on the mucous membrane was 15 days: the shortest time was one day, and the longest 103 days, or over three months. Of these cases, the nose was the principal habitat in 17 cases, or 65 per cent.; the throat in the remaining 35 per cent. In one case the Klebs-Löffler was found, together with other organisms in the ear, the child suffering from otitis media, which may or may not have been due to this bacillus.

These experiments and other investigations in this line seem to indicate that diphtheria bacilli, purulent or non-purulent, are present in an unfortunately large percentage of apparently unaffected nasal and pharyngeal mucous membranes.

SCHEPPEGRELL.

Should Cultures for Bacteriological Examination be Taken from the Nasal Chambers as Well as from the Throat in Cases of Suspected Diphtheria?

VANSANT, E. LARUE.—(*Medical Review*, March 6, 1897.)

Dr. Vansant has recently commenced taking cultures for bacteriological examination from the nasal chambers, as well as from the membranous deposits from the throat, in cases of suspected diphtheria. In the two cases which he reports the bacteriological examination showed diphtheria

bacilli in the cultures from the nose, and gave negative results in those taken from the throat.

The embarrassment to the attending physician, caused by receiving negative bacteriological reports in cases clinically so well marked as to cause him to make a positive diagnosis of diphtheria, and the lessened carefulness and insufficient isolation on the part of the physician after receiving such a report, should certainly cause us to take every means to insure an accurate result. Dr. Vansant, therefore, suggests that in all cases of suspected diphtheria cultures should be taken from the nasal chambers, as well as from the site of the membranes of the throat.

SCHEPPEGRELL.

The Value of Early Intubation in Pseudo-Membranous Croup.
WOLFE A. C., Columbus, Ohio.—*Columbus Medical Journal*, March, 1897.

It is important to perform intubation in all cases of stenosis caused by pseudo-membranous croup. The great object in the treatment of this affection is to prevent the tendency to death, and to do this, the vitality and strength of the patient should be maintained as much as possible, and one of the prime factors in accomplishing this is to give the patient sufficient pure air, this being done early, for delay means disaster.

We should resort to intubation as soon as the stenosis interferes with the free entrance of air to the lungs, as indicated by recession of those parts of the chest which yield to external air pressure. If dyspnoea is steadily increasing, especially if there has been a suffocative attack, and if expiration is as labored as inspiration, then no time should be lost in intubating.

Accompanying the dyspnoea will be found hoarseness or suppression of the voice, retraction of the supra-clavicular and epigastric regions and of the intercostal space with more or less lividity. Experience has shown that the chances of recovery are much greater if the operation be performed early than if it be reserved as a last resource, and the younger the child the greater is the risk in waiting. If the operation be delayed too long the engorgement of the lungs or trachea leads to bronchitis and catarrhal pneumonia, and, therefore, brings about a fatal result.

Intubation should be performed in diphtheritic croup as soon as it is certain that the larynx is affected, chiefly with the view of preventing the spreading of the membrane

downward; and this also aids in preventing the toxemia due to the introduction into the general circulation of certain very virulent agents whose effects are expended mainly upon the nervous systems. SCHEPPEGRELL.

Anti-Diphtheritic Serum.

DE VERA and MODAN.

Anti-diphtheritic serum (Roux) as used in Cuba (civil practice) is mentioned favorably by Drs. Felix de Vera and Modan of Matanzas (*Cronica Medica Tuirurgica de la Habana*, No. 3, Feb., 1897). The serum is furnished by this medical journal from its own laboratory. Enough cases have been reported to give the assurance that good results are derived from the use of the serum.

HALE.

VI.—MISCELLANEOUS; THYROID GLAND; ŒSOPHAGUS, ETC.

A Successful Case of External Œsophagotomy for a Tooth-Plate 22 Months Impacted in the Œsophagus; The Summary of 167 Operations Recorded up to January, 1897.

BULL, W. T., and WALKER, JNO. B.—(*Medical Record*, March 6, 1897).

A woman of 40 years noticed, after a slight fainting attack, that an upper plate carrying two false teeth had disappeared. The plate was of platinum one and one-fourth inches long and three-fourths inch broad, irregularly indented in front and provided with two half circles of small wire for hooking on to the sound teeth.

There was slight pain, but the next day the patient could swallow nothing, and it was found impossible to pass a bristle probang further than six inches. The following day, however, liquids were taken, and this facility of swallowing increased, and five or six days later she was able take solid food. There was no marked disturbance of the general health 18 months after the time the plate was swallowed. At this time, however, dyspnoea was noticed with loss of flesh and strength, and hoarseness of the voice. The symptoms become rapidly aggravated, and 22 months after the accident the tooth-plate was successfully removed by external Œsophagotomy. The position of the plate had been previously ascertained by means of a skiagraph.

SCHEPPEGRELL.

On the Pathology of the Thymus Gland.

FISCHER, Berlin.—(*Arch. f. Klin. Chir.* LII. 2, p. 313. *Deutsch Med. Wochenschr.* 1897, No. 8.)

As a result of microscopic examinations, most authors

pronounce the thymus gland a lymphatic organ. As little definite is known of its pathology, even the smallest contribution is welcome. F. reports, from Bergmann's clinic, a case of malign lymphoma (Hodgkin's disease) in a boy of five, in whom the thymus gland, hyperplastic to an extraordinary degree, formed a large mediastinal tumor. It was examined most thoroughly before and after death. The respiratory embarrassment was urgent enough to call for tracheotomy. A similar case was observed by Eberth in 1870. On the basis of these two reports, F. discusses the relations of the thymus gland to the origin and development of pseudo-leukemia. He advances the explanation that some general virus produces an affection of the whole lymphatic apparatus which, at once or in very short intervals, causes atypical proliferation in lymphatic-gland groups in various parts of the body, and, in addition, incites identical growths, consisting of lymphoid cells, in liver and kidneys. In both cases, the thymus gland was diseased to such a predominating degree that it must be considered the focus of the disease. Most investigators affirm the existence of an *independent hyperplasia of the thymus gland*. Moreover, in F.'s case the respiratory disturbance, the so-called laryngismus, which ante-dated the swelling of the lymphatic glands a long time, points to a primary disease of the organ. The disease and its termination resembled *thymic asthma*. Compression of the respiratory organs by the enlarged thymus gland may be excluded in all those cases in which death occurs suddenly, without disturbance of breathing—above all, when there is neither protracted dyspnoea nor any sign of stenosis. Cases, like F.'s, with protracted dyspnoea are different. There it seems plausible that the compression stenosis of the trachea may gradually increase, thus simulating laryngismus. To be sure, twenty-four hours after death only a slight compression could be demonstrated which, as in all cases, can, at the best, account for the dyspnoea but never for fatal asphyxia. Potts' explanation, that laryngismus is due to central disturbances resulting from a general constitutional disease, seems more acceptable than the mechanical theory. MORGENTHAU.

On the Treatment of Graves' Disease by Means of the Thymus Gland.

MACKENZIE, HECTOR.—(*American Journal of the Medical Sciences*, Feb. 1897).

After a careful analysis of the subject, Dr. Mackenzie

concludes that the thymus gland possesses no specific action in Graves' disease. He found it in most cases to have no effect either on the heart, on the goitre or on the exophthalmus. At the same time, it appears to be a remedy of some value, improving the general condition, and in this way may assist toward the recovery of the patient. He places it, at present, in the same class of remedies as cod liver oil.

SCHEPPEGRELL.

Incomplete Fracture of the Left Cornu of the Thyroid Cartilage Resulting from Self-Inflicted Violence.

DE ROALDES, A. W., New Orleans.—(*New York Medical Journal*, Feb. 6, 1897).

A man 37 years old, while eating olives, accidentally swallowed one of the seeds, which seemed to him to have lodged in the larynx. Alarmed at the serious attack of suffocation which followed, the patient excited vomiting by putting his finger into his throat, but did not know whether he expelled the seed or not. As the sensation of a foreign body in the larynx did not disappear, the patient began to manipulate his larynx externally in a rather forcible manner. The patient remarked that his whole throat "cracked" under the violent pressure of his finger, but he did not refer this sensation to any particular part of his larynx.

On examination, no foreign body could be found. A v-shaped projection, however, was observed springing from the left lateral wall in the direction of the aryteno-epiglottidean fold at a somewhat right angle. By digital examination the angular projection could almost be smoothed down by continued pressure from within, but the projecting mass reappeared on removal of the finger. A few days later, the disagreeable sensation of a foreign body in the throat gradually diminished, but when last seen the patient still had the same objective appearance in the larynx as when originally examined. A diagnosis of an incomplete fracture of the left superior cornu of the thyroid cartilage was made.

SCHEPPEGRELL.

Extraction of a Bone from the Œsophagus, Located with the Roentgen Rays.

SCHUELLER, MAX, Berlin.—(*Berl. Klin. Woch.*, No. 13, p. 270, March 29th, 1897.)

An elderly lady had swallowed a bone, two days before, which had lodged in the œsophagus. She had severe pain and could not swallow even a little fluid. The nights were passed sitting up and without sleep. With a sound, a hard

body is felt a little below the cricoid cartilage. It cannot be moved. The fluoroscope showed the shadow of the lower jaw; lower, of the hyoid bone; still lower, the epiglottis appeared transilluminated in the form of an inverted S. The thyroid plate was recognized only as a round shadow of the size of a nickel while the cricoid cartilage was more marked. Just below and behind it appeared a *dark irregular shadow, a little larger than a pea*. On swallowing, this spot moved up and then down. It became more distinct on swallowing, because then a three-cornered light space appears between larynx and vertebral column. The dark spot corresponded to the seat of pain. The smallness of the shadow of the bone, which according to S.'s impression was wedged in *horizontally*, seemed to him to be due to its *appearing foreshortened*. Seen from behind or in front, it was covered by the shadow of the vertebral column. There was no time to be spared for photography, everything being prepared for external œsophagotomy. One attempt to extract the bone with Stoerk's laryngeal forceps proved successful. The bone had the shape of a knife-blade, was very sharp and pointed, 3.2 c.m. long and 0.7 c.m. wide at the broad end. The patient could be discharged after four days. The advanced age of the patient was of advantage for the Roentgen examination, the calcification of the laryngeal cartilages making them better visible. However, even in younger people a bone could probably be located. Metallic bodies would probably be found through the vertebral column. The author expects important data from the Roentgen rays in regard to the physiology of deglutition.

MORGENTHAU.

The Surgery of the Thyroid Gland.

SHEARS, G. F.—(*The Clinique*, Chicago, Aug. 15, 1896.)

Dr. Shears calls attention to the fact that some surgeons, among whom may be mentioned Baumgartner, believe that the removal of the thyroid gland has nothing to do with myxoedema except that it permits of injury to the sympathetic or recurrent laryngeal nerve. To this is opposed the fact, that in partial excision myxoedema results in only about one per cent. of cases, while the probability of nerve injury is almost as great as in complete excision. In those cases in which the disease does not make its appearance, it is quite possible that some portion of the gland has not been removed, or that accessory glands exist.

SCHEPPEGRELL.

CASE OF SUPPURATING MASTOIDITIS WITHOUT
INVOLVEMENT OF THE MIDDLE EAR, SIM-
ULATING DISEASE OF THE LATERAL
SINUS, AND JUGULAR VEIN.*

BY T. PASSMORE BERENS, M. D.

NEW YORK.

E. S., female, age 16, came to the Manhattan Eye, Ear and Throat Hospital November 20, 1896, complaining of severe pain in the right occipital region. This she attributed to a blow from a stone several weeks before. She had some tinnitus, but only slight shooting pains in the ear of the same side. Hearing unimpaired. No discharge and no change in the membrana tympani. No elevation of temperature. No vertigo. On December 4, the pain in the occiput had become so severe, in spite of analgesics, that she was admitted to bed. The pain in the ear had increased, but was complained of only on inquiry. Some tenderness over mastoid. Membrana tympani unaffected. On December 5, Dr. J. E. H. Nichols opened the mastoid; he found the bone thin, but no pus, and no destruction of tissue. Toward the antrum the bone was harder than elsewhere. He did not enter the antrum. The patient did well and the pain disappeared. She was returned to the out-patient department two weeks after the operation. At this time, owing to the illness of Dr. Nichols, the case came under my care. The wound was granulating nicely, but there was some pain and tenderness at the tip of the mastoid. Some pus, and on probing the wound bare bone was found toward the "ster." In a few days the old pain in the occipital region returned and severe pains developed in the ear. The membrana tympani was still normal. On December 30, she was readmitted to bed with a temperature of 101 F. Hot moist applications gave relief from the pain and the temperature fell to 99 $\frac{2}{5}$ F. The temperature on January 2, 1897, rose to 101 F., and at this time the pain in the ear became intense, as did the pain in the right occipital region. Over the mastoid and below it there was extreme tenderness, and a firm, hard line about the size of a lead pencil could easily be felt beneath the border of the sterno-cleido-mastoid muscle, extending downward to about the level of the upper border of the thyroid cartilage. This was very sensitive. Moist heat gave relief, and the temperature fell during the night to 98 F. On January 3, the temperature reached 102 $\frac{1}{5}$ F. The hardness in the jugular region persisted. The pulse was ninety, and irregular. Vertigo, nausea and vomiting, developed. Eye grounds normal. A slight congestion was for the first time noted along the upper border of Schrapnell's membrane. No bulging. The patient was etherized and the mastoid opened through the line of the first incision. The

* Reported to the New York Otological Society, January, 1897.

scalpel entered the body of the mastoid at the first stroke. There was no resistance from the bone, which was badly necrosed, as also was the periosteum in spots. The mastoid was a mass of granulations, pus and small pieces of necrosed bone, even to its tip.

The removal of this tissue caused a complete ablation of the mastoid.

After thorough cleansing, the antrum was entered. There was much pus, granulation and myxomatous tissue. The bone over the sinus, and, in fact, over the internal table, was healthy. In following the disease downward toward the old site of the mastoid tip, the probe entered a sinus. This sinus was opened by a free incision. It led downward along the anterior border of the sterno-cleido-mastoid muscle beneath it, and within its sheath to the upper border of the thyroid cartilage. The vein beneath was healthy. The wound was then packed with iodoform gauze. The temperature dropped to normal, and there was no pain. On January 4, the temperature again rose to $102\frac{4}{5}$ F., and some pain returned in the occipital region. The wound was clean and the tenderness was less. Some hours later it was found that the patient was beginning to menstruate for the first time. On the perfect establishment of the menstrual flow the temperature fell to normal and the pain ceased. It is interesting here to note that there was a slight rise in temperature and a recurrence of slight pain in the occipital region at her next menstruation, which is now just finished. The wound is almost healed. The case is of especial interest as illustrating the fact that there may be extensive bony necrosis of the mastoid and antrum without involvement of the middle ear.

There is but slight deformity resulting from the loss of the mastoid and suggests that where much destruction of this process exists, it is better to remove it entirely rather than to leave the tip and have as a result one of those large depressed cicatrices that we sometimes see.

The fistula along the edge of the sterno-cleido-mastoid muscle was very suggestive of phlebitis of the jugular; the more so, in that there was the irregular pulse, vertigo, nausea and vomiting.

4 E. 43d Street.

NOTES AND ANNOUNCEMENTS.

(Under this heading the ANNALS will publish items of interest to its readers. Please address GEORGE MORGENTHAU, M. D., 34 Washington street, Chicago.

Koerner, of Rostock (Germany) has been made professor honorarium.

H. T. Butlin was made president of the London Laryngological Society.

The professor of otology at the University of Leyden (Holland), Doyer, died in March.

The Paris faculty has at last officially recognized our specialties by appointing Dr. Caste regular teacher of these branches.

Dr. H. A. Alderton has been appointed visiting otologist to the Home for Friendless Women and Children, Brooklyn, N. Y.

Dr. Alexander Prussak, who devoted himself greatly to the anatomy of the middle ear, is reported dead at St. Petersburg.

The German Otological Society is to meet at Dresden on the 4th and 5th of June; the Austrian, at Vienna, on the the 28th and 29th of June.

Dr. Paul Heymann of Berlin, has been elected an honorary member of the Vienna Laryngological Society. Its officers for 1897 are Stoerk, president; Chiari, vice-president; Ronsburger, secretary.

Professor A. Barth, of Leipzie, will have at his command 24 to 30 beds for ear patients. The chief of this clinic is to receive an annual honorarium of 5,000 marks; each of his two assistants 2,000 marks.

The program of the July meeting of the Belgian Oto-Laryngological Societ will consist of (1) Syphilis of the ear (Broeckaert and Hennefert); and (2) First symptoms of laryngeal tuberculosis (Cheval and Rousseaux).

At the age of 37 one of the foremost of Italian specialists, Dr. Corrado Corradi, was called away. His residence was Verona, whose hospital has been left a legacy by him of 30,000 francs for its oto-laryngological department.

On the 5th of February Professor Schroetter, of Vienna, celebrated his sixtieth birthday. Professor Chiari made a congratulatory address in the name of the former assistants. Prof. Schroetter's

numerous pupils in America join his European friends in extending him the very best wishes.

Burglars entered the residence of Dr. Adolf Alt at St. Louis on the night of May 9, relieving the family of a large sum of money and jewelry. The prompt action of Dr. and Mrs. Alt resulted in the capture of the intruders before they were half a dozen blocks away. All the effects and money were recovered.

The New York Otological Society has elected the following officers for 1897: President, Dr. Gorham Bacon; vice-president, Dr. C. J. Kipp; secretary and treasurer, Dr. H. A. Alderton; committee on admission, Drs. E. B. Dench, M. Toeplitz and N. J. Hepburn. Dr. William McEwen, of Glasgow, was elected an honorary member of the society.

The next meeting of the French Society of Otolgy and Laryngology will take place May 3, 1897, at the Palais des Sociétés savantes, Paris. The subjects for discussion will be: 1. The treatment of ozena (Moure); 2. The causes and prognosis of recurrent paralysis (Lermoyez); and 3. The ear, nose and throat from the medico-legal point of view (Castex).

The second annual meeting of the Western Ophthalmological, Otological, Laryngological and Rhinological Association was held at St. Louis, Mo., April 8-9, 1897. The following officers were elected: B. E. Fryer, president, Kansas City; Hal. Foster, secretary, Kansas City; W. L. Dayton, treasurer, Lincoln, Neb.; J. Elliott Colburn, 1st vice-president, Chicago; F. M. Rumbold, 2d vice-president, St. Louis, Mo.; A. E. Bulson, jr., 3d vice-president, Fort Wayne, Ind. The next meeting will be held at Chicago, April, 1898.

**Program of the Section of Laryngology, Rhinology and Otolgy of the American Medical Association,
June 1, 2, 3, 4, 1897.**

TUESDAY, JUNE 1—AFTERNOON SESSION.

1. Address of Chairman—W. E. Casselberry, Chicago.
2. The So-called Bleeding Polyp of the Septum—Norval H. Pierce, Chicago.
3. Some Notes Concerning the Influence of Sexual Excitement upon Intra-nasal Disease—Charles P. Grayson, Philadelphia.
4. Nasal and Laryngeal Affections Traceable to Diseases of the Genital Organs—A. B. Kirkpatrick, Philadelphia.
5. Two Cases of Asthma, due to Intra-nasal Obstruction—Wilbur W. Bulette, Pueblo, Col.
6. Something on the Amusing Side of Nasal Reflexes—Arthur G. Hobbs, Atlanta, Ga.
7. Spasmodic Closure of the Glottis in the Adult—Hamilton Stillson, Seattle, Wash.
8. Salivary Calculi—W. Freudenthal, New York.

9. An Unusual Case of Blood-cyst of the Posterior Nares—John N. Mackenzie, Baltimore.
10. A Clinical and Experimental Study of Atrophic Disease of the Upper Air Passages—J. L. Goodale, Boston.
11. Some Remarks on Cases of Atrophic Naso-pharyngitis—Edward F. Parker, Charleston. S. C.
12. Treatment of Acute Rhinitis—A. R. Solenberger, Chicago.
13. The Treatment of Chronic Catarrhal Diseases of the Throat in General Practice—J. M. G. Carter, Waukegan, Ill.
14. Fluoroscopy in Certain Forms of the Diseases of the Throat, Nose, Lungs, etc—J. Mount Bleyer, New York.
15. Non-specific Perforation of the Nasal Septum—J. R. Straw, Ashland, Wis.
16. Practical vs. Theoretical Tonsillotomy—J. Homer Coulter, Chicago.

WEDNESDAY, JUNE 2—MORNING SESSION.

1. A case of Chronic Abscess of the Base of the Tongue—C. W. Richardson, Washington, D. C.
2. A case of Polypus, involving the Antrum of Highmore—A. E. Prince, Springfield, Ill.
3. A case of Recurrent Headaches, which continue until relieved by the spontaneous discharge of a watery fluid from the nostrils. The successive opening of the sphenoid, frontal and maxillary sinuses and ethmoidal cells without relief of the recurrent headaches—W. Scheppegrell, New Orleans.
4. Suppurative Ethmoiditis—Robert W. Haynes, Los Angeles.
5. Studies of the Nasal Fossa and Maxillary Sinus, with their relations—M. H. Cryer, Philadelphia.
6. Discussion—The Treatment of Empyema of the Frontal Sinus. Opened by J. H. Bryan, Washington, D. C.
7. A contribution to the Surgery of the Accessory Cavities of the Nose—Max Thorner, Cincinnati, O.
8. Menière's Disease, with report of a case—James M. Brown and Judson Deland, Philadelphia.
9. Disease of the Conjunctiva in relation to Diseases of the Nasal Passages—Robert N. Keely, Philadelphia. Discussion opened by J. F. Fulton, St. Paul.
10. Irruption of Teeth into the Antral Cavities—Alexander W. MacCoy, Philadelphia.
11. Exhibition of Anatomical Sections of the Ear and Accessory Nasal Cavities—C. R. Holmes, Cincinnati.
12. The Use of the Aqueous Extract of Suprarenal Capsule in operation on the Turbinated Bodies—J. Aloysius Mullen, Houston, Texas.
13. Empyema of the Maxillary, Ethmoidal and Sphenoidal Sinuses attended by General Septicemia following attempted removal of Inferior Turbinal Body; Operations; Recovery—H. V. Würdemann, Milwaukee.
14. Catheterization of the Eustachian Tube through the Mouth—D. Braden Kyle and W. H. King, Philadelphia. (Paper read by W. H. King.)

WEDNESDAY, JUNE 2—AFTERNOON SESSION.

1. Report of two cases of Abscess of the Mastoid Region—J. H. Bryan, Washington, D. C.
2. Mastoid Empyema without Objective Symptoms, with presentation of patients—S. MacCuen Smith, Philadelphia.
3. An Historical Sketch of the Operation of Opening the Mastoid for Suppurative Middle Ear Disease—Laurence Turnbull, Philadelphia.
4. Phenomena observed in twelve cases at various stages of the operation of Tenotomy of the Stapedius, and section of the Incudostapedial articulation in chronic Catarrh of the Middle Ear; improvement in the hearing for low tones following Wolf's operation; exhibition of the case—E. B. Gleason, Philadelphia.
5. The clinical history of three cases of Suppurative Otitis Media presenting serious constitutional symptoms, with special reference to the Vital Indication for Mastoid Operation—Hiram Woods, Baltimore.
6. Caries and Necrosis of the Roof of the External Auditory Canal—Seth Scott Bishop, Chicago. Discussion opened by G. Hudson Makuen, Philadelphia.
7. A case of Rhino-pharyngeal Fibroma, with projections extending through the Two Nasal Cavities to the Anterior Nares—Hanau W. Loeb, St. Louis, Mo. Discussion opened by E. F. Ingals, Chicago.
8. Contribution to our knowledge of the Diseases of the Naso-pharynx—Emma E. Musson, Philadelphia.
9. Question Regarding the Etiology of Adenoid Vegetations, as found in the Naso-pharynx, with suggestions as to treatment; also a Serrated Curette-syringe, new, for the purpose of freeing the Vault of Detritus after operation—M. C. O'Toole, San Francisco.
10. Adenoids in the Naso-pharynx, with Operative Treatment of the same—W. M. Roads, Cincinnati. Discussion opened by M. R. Ward, Pittsburg.
11. Report of a case of Nasal Myxædema—A. H. Cleveland, Philadelphia.
12. Diseases of the Mastoid; course and treatment—Frank S. Milbury, Brooklyn.

THURSDAY, JUNE 3—MORNING SESSION.

1. General and Local Anesthesia in Rhinology and Laryngology—Joseph S. Gibb, Philadelphia.
2. Tonsil and Adenoid Operations under Anesthesia by Nitrous Oxide and Nitrous Oxide with Oxygen; a preliminary report—W. E. Casselberry and F. Menge, Chicago. (Paper prepared and read by F. Menge.) Discussion opened by J. O. Roe, Rochester.
3. Cocain and Eucain; a comparison—T. H. Shastid, Galesburg, Ill.
4. Cocain, Its Uses and Abuses in Laryngology—Ledru P. Smock, Philadelphia.
5. Certain conditions of the Tonsils, which limit the usefulness of

- the Tonsillotome—Arthur A. Bliss, Philadelphia. Discussion opened by Charles H. Knight, New York.
6. Fracture of the Nasal Bones—Frederick C. Cobb, Boston.
 7. The treatment of chronic inflammation of the Tonsils—J. A. Ellegood, Wilmington, Del.
 8. Peritonsillitis; Its Etiology and Treatment—Kate W. Baldwin, Philadelphia.
 9. Contribution to the Study of Prophylaxis in Diphtheria of the Upper Respiratory Tractus—Henry L. Wagner, San Francisco.
 10. Municipal control of Diphtheria—W. K. Jaques, Chicago.
 11. The Relation of Nasal Disorders to Pulmonary Tuberculosis—S. E. Solly, Colorado Springs, Col.

THURSDAY, JUNE 3—AFTERNOON SESSION.

1. Three obscure cases of Laryngeal Disease: Tuberculosis, Syphilis, Epithelioma—Charles H. Knight, New York.
2. Recent advances in the Surgical Treatment of Malignant Disease of the Larynx—D. Bryson Delavan, New York.
3. Malignant Growths of the Larynx, with report of cases presentation of a specimen from a case of Fatal Extirpation—Robert C. Myles, New York. Discussion opened by J. Solis Cohen, Philadelphia.
4. Some Defects of Speech; Their cause and treatment, with exhibition of case—G. Hudson Makuen, Philadelphia. Discussion opened by E. L. Vansant, Philadelphia.
5. Oesophagotomy for the removal of a tooth plate impacted five days in the upper third of the Oesophagus—John O. Roe, Rochester.
6. Stenosis of Larynx—W. S. Jones, Camden, N. J.
7. A case of Bilateral Gummata, with dangerous Stenosis of the Larynx—S. K. Merriek, Baltimore.
8. Tubercular Laryngitis—Ellet Orrin Sisson, Keokuk, Iowa.
9. Tuberculous Tumor of the Larynx—Louis Juris, Philadelphia.
10. Sand Burrs in the Larynx—D. Emmett Welsh, Grand Rapids, Mich.

FRIDAY, JUNE 4—MORNING SESSION.

1. Otitis Pachymeningitis Externa—Jos. A. Andrew, New York.
2. Acute Myringitis—Ralph W. Seiss, Philadelphia.
3. The treatment of Tinnitus Aurium—G. Sterling Ryerson, Toronto, Canada.
4. Discussion—Tinnitus in Its relation to Nasal and Aural Affections. Opened by B. Alexander Randall, Philadelphia.
5. The treatment of Acute Otitis Media; acute Earache—J. Hubert Claiborne, New York.
6. Acute and chronic Caries and Necrosis of the Mastoid Pachymeningitis Externa; Epidural Abscess, circumscribed Leptomeningitis—Herman Knapp, New York.
7. What can be accomplished by treatment of the Eustachian Tube—George Morley Marshall, Philadelphia.
8. Natural Gas and Acute Inflammation of the Eustachian Tube—John Johnson Kyle, Marion, Ind.
9. Eustachian Deafness—A. J. Erwin, Mansfield, Ohio.

10. A novel method of the use of Dry Heat in Middle Ear Diseases, Otagia, etc.—E. L. Vansant, Philadelphia.
11. Non-surgical Diseases of the Ear—E. L. Klopp, Philadelphia.
12. Surgical treatment of Acute Inflammation of the Middle Ear—E. B. Dench, New York.

FRIDAY, JUNE 4—AFTERNOON SESSION.

Presentation of Instruments.

1. Larvæ complicating Middle Ear Disease—Howard McIlvain Morton, Minneapolis.
2. The Tonograph and Its Possibilities—H. Holbrook Curtis, New York.
3. The double current Eustachian Canula in the treatment of Middle Ear Catarrh—James E. Willetts, Pittsburg.
4. Intra-tympanic surgical treatment of Chronic Purulent Otorrhea—C. H. Burnett, Philadelphia.
5. Ossiculotomy in Chronic Otitis Media—G. A. Stucky, Lexington, Ky.
6. The venous channels of the Aural Region; illustrated with Stereopticon—B. Alexander Randall, Philadelphia. Discussion opened by W. E. Casselberry, Chicago.
7. The relation existing between Bright's Disease and Certain Ear Symptoms—Francis Dowling, Cincinnati.
8. Some further results in treating Ears by Massage methods—Louis J. Lautenbach, Philadelphia.

